



CNBM

China National Building Material Group Co.,Ltd.

# SUSTAINABILITY REPORT 2021



China Jushi Future Factory Inspection & Assembly Area



# Report Norms

This is the thirteenth sustainability report released by China National Building Material Group Co., Ltd. (CNBM), truly reflecting CNBM's pursuit of sustainable development and fulfillment of social responsibilities.

## Entities Covered by the Report

All wholly-owned or controlled (including absolutely and relatively controlled) member enterprises of CNBM. For brevity, the terms "CNBM", the "Group" and "we" are used in the Report to refer to China National Building Material Group Co., Ltd. (unless otherwise specified in the text).

## Period Covered by the Report

January 1<sup>st</sup> to December 31<sup>st</sup>, 2021. Some of the content goes beyond the above period.

## Reporting Cycle

This Report is an annual report.

## Basis for Preparation

Guiding Opinions on the Implementation of Social Responsibility by State-owned Enterprises issued by the State-owned Assets Supervision and Administration Commission of the State Council

Corporate Social Responsibility Reports in China for Nonmetal Mineral Products (CASS-CSR 4.0) issued by the Research Center for Corporate Social Responsibility, Chinese Academy of Social Sciences

Guidance on Social Responsibility Reporting issued by the Standardization Administration of China (GB/T36001-2015)

Standards for Sustainable Development Reporting (GRI Standards) of the Global Reporting Initiative (GRI)

ISO26000 Guidance on Social Responsibility issued by the International Standard Organization

2030 Agenda for Sustainable Development Goals (SDGs) issued by the United Nations

## Data Sources

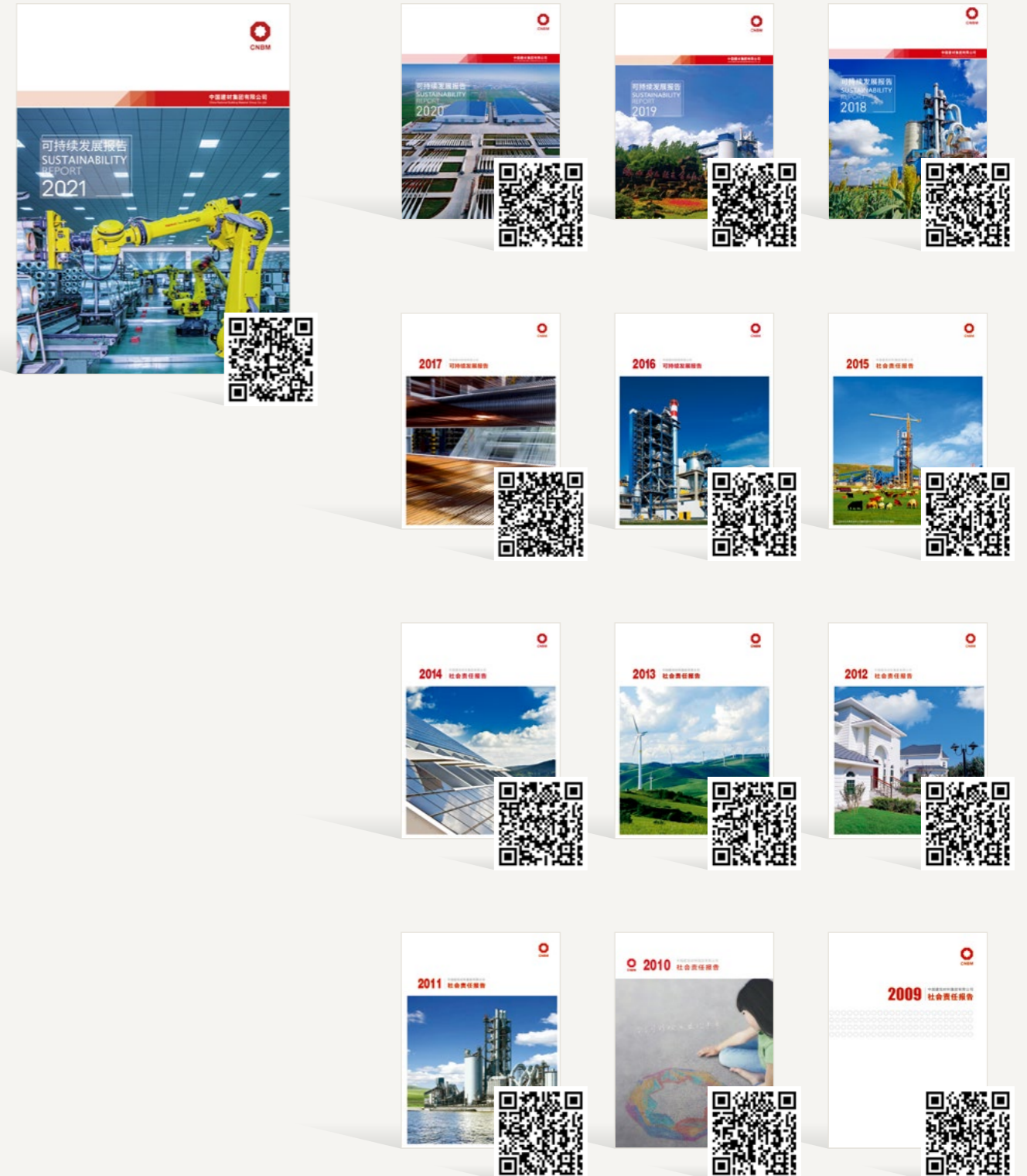
All the information and data used herein come from the Headquarters and member enterprises of CNBM. Notes have been made in the Report to indicate information from external references. Unless otherwise stated, all monetary amounts are expressed in RMB.

## QA

We strive to ensure the authenticity, integrity and balance of the contents in the Report, and make breakthroughs in innovation and readability. Moreover, there are no false records, misleading statements or major omissions in this Report.

## Report Availability

This Report has printed and electronic versions and is mainly released to stakeholders and the public in the form of a PDF electronic document. You can request the printed version via the contact information on the cover or log onto [www.cnbm.com.cn](http://www.cnbm.com.cn) to download the electronic version.



# CONTENTS

- 4 Chairman's Address
- 6 About US
- 12 Responsibility Featured Story: Building Materials to Facilitate the Dual Carbon Goals

Part I  
Smart Use of Resources to Create Sustainable Value



## 01 Promoting Prosperity with Development

- 22 Proud Results
- 26 Precision Management
- 28 Deepening of Reform
- 30 Guidance by Party Building

## 02 Creating a Better Future with Science and Technology

- 34 Innovation Management
- 36 Collaboration on Innovation
- 38 Achievements of Technological Innovation

## 03 Living in Harmony with Nature

- 42 Green Management
- 43 Green Production
- 45 Green Services
- 46 Services for the Winter Olympics

Part II  
Services for Construction to Enable a Better Life



## 04 Growing Together with Employees

- 52 Safety and Prudence
- 57 Employees' Rights and Benefits
- 58 Employees' Development
- 59 Employees' Happiness

## 05 Marching Towards a Better Society

- 64 Openness and Win-Win Development
- 66 Rural Revitalization
- 68 Service Community

## 06 Assuming the Long-Term Responsibility

- 72 Value of Responsibility
- 74 Responsibility Management
- 76 Responsibility Communication
- 78 Responsibility Sharing
- 80 Honor of Responsibility

- 82 Future Prospects
- 84 Appendix





## Chairman's Address



### With the "Top Priorities of the Country" in Mind Building the "Pillar of the Country"

The year 2021 marks the first year of the 14<sup>th</sup> Five-Year Plan period and the new journey of the comprehensive construction of a modern socialist country as well as the second centenary goal. The year 2021 is extremely extraordinary and difficult. Based on the overall strategy of the great rejuvenation of the Chinese nation and major changes unseen in a century, we are committed to "top priorities of the country", integrating the cause of CNBM into the grand strategy of the Party and the country, taking "creating a better world with materials" as our mission and continuous innovation as our driving force, and taking the initiative to build "the Pillar of the Country" with all efforts.

#### Strengthen the innovation-driven development with the attitude of "daily progress from innovation"

In pursuit of pragmatic innovation, we have continuously strengthened our technological strength, built the "Pillar of the Country", and adopted the "open competition mechanism" for sources of original technologies and key & core technologies, so as to strengthen the endogenous power of sci-tech innovation. CNBM was selected into the first batch of central enterprises as the sources of original technologies. Focusing on the key links and products of China's new materials industry chain and supply chain, CNBM has accelerated efforts to tackle bottlenecks in technology. A large number of new materials such as low-heat cement, advanced composites and neutral borosilicate pharmaceutical glass tubes have been applied in major national projects, the blue sky protection campaign, COVID-19 prevention and control. Since its successful production, the Xining 10,000-ton carbon fiber base has led domestic carbon fibers into a new era of high-quality development. Innovations in business modes, such as the "Cement+" mode and intelligent logistics, have contributed substantial benefits to the economic and social development.

#### Improving business performance with the determination of "grand contribution from grand ambition, high achievements from high diligence"

A thousand boats set sail in a race against time. Guided by "two benefits and four rates", we have balanced the scale and quality, speed and efficiency, and safety and development, vigorously exploited markets, increased revenue and reduced expenditure, and strived for quality improvement, efficiency increase and steady growth. After continuous adjustment in 2021, the Group has become more concentrated in its main business, more rational in structure and stronger in momentum. All cadres and employees worked hard in unity, faced difficulties and made steady progress, achieving net profits of RMB 28.65 billion (up 42.3% year on year), and total profits of RMB 38.69 billion (up 26.4% year on year), creating a new record and delivering a good report to the Party, the state and shareholders. To this end, the Group has actively contributed to "stability on six fronts and security in six areas", strived to make a more stable, more

practical and further progress in the new journey of high-quality development, fully demonstrating its strength as the economic pillar of central enterprises.

#### Energizing the reform with the willpower of "bringing innovation out of change"

Responding to changes and breaking new ground, we have thoroughly studied and implemented the principles delivered in Xi Jinping's important statement on the reform and development of state-owned enterprises and Party building, and resolutely put into practice the decisions and arrangements of the CPC Central Committee and the State Council. Guided by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC), we have focused on the three-year action, thoroughly implemented the "4335" guiding principle, and completed more than 85% of the reforms in the Group and secondary subsidiaries; strived to improve the modern enterprise system with Chinese characteristics, clearly formulated the list of powers and responsibilities (458 enterprises had boards of directors where possible, and 17 important subsidiaries formulated plans for implementing the functions and powers of the board of directors); solidly promoted the reform of state-owned capital investment companies, and continued benchmarking world-class management promotion actions. Two subsidiaries of the Group were awarded "Benchmarking Enterprises for the Establishment of Management Benchmarking Actions for Key State-Owned Enterprises". Fifty-one enterprises that have met the standard of integration of informatization and industrialization were added, with 118 enterprises in total, making the Group rank first among central enterprises. The Group was selected into the third batch of advanced models of "learning from the advanced, focusing on implementation and promoting the reform" by the State Council SOE Reform Leading Group Office.

#### Strengthening Party building with the tenacity of "upholding the firm and indomitable spirit"

Practicing the original inspirations and taking on the mission, we have adhered to the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, continuously strengthened the Party's overall leadership over SOEs, and guided Party organizations at all levels to implement the "1345" Party building system; conscientiously implemented the special action for Party building innovation and expansion by the central enterprises, strengthened the Party's ideological building and organizational building, managed the Party fully and with rigor, and promoted the "four combinations" of Party leadership and corporate governance, Party building and production and operation, Party building culture and corporate culture, intra-Party supervision and honest governance; took the Party's political development as the highest beacon, conducted a variety of "Party building+" activities, accelerated the deep integration of Party building, strived to lead high-quality development with

high-quality Party building, and effectively transformed the political advantages of Party organizations into development advantages.

#### Securing a better life with the responsibility of "gathering all resources to benefit the people"

There is a time limit for the creation of all things, and has a limited number of resources on the earth. We have resolutely implemented the Dual Carbon Goals, deepened green development, arranged low-carbon technology, and advanced the cement sector to high-end, intelligent, green transformation. The concepts of energy conservation and green development have been applied to the cement, glass and even the entire building materials industry and inorganic non-metallic materials. Besides, a batch of green factories and mines have been added, and the path to Dual Carbon Goals has been thoroughly studied, which actively contributed to ecological progress, protected lucid waters and lush mountains, and constantly expanded a new green road for high-quality development. The spring from its source pours forth day and night. We have concretely fulfilled our responsibilities as corporate citizenship, organized voluntary services for public welfare, and taken the lead in stabilizing employment, supporting enterprises, rural revitalization, responding to COVID-19, volunteering, etc., so as to demonstrate the brave and reliable responsibility of central enterprises in crisis.

The river flows day and night, as if singing an impassioned song that never stops. On this new journey, we will unite more closely around the CPC Central Committee with Comrade Xi Jinping as its core, take Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era as the highest beacon, give top priority to the Party's political development, adhere to the general principle of pursuing progress while ensuring stability, and act on the new development philosophy. Through development driven by innovation, empowered by reform, facilitated by internationalization and guided by Party building, we will ensure "stability on six fronts" and maintained "security in six areas", stabilize the macroeconomic market, keep the economy running within the reasonable range, maintain overall social stability to contribute "building material strength", promote new achievements in reform and development Party building, and greet the 20<sup>th</sup> CPC National Congress with excellent results.

Party Secretary &  
Chairman

Zhou Yuxian



## About US

### Company Profile

China National Building Material Group Co., Ltd. ("CNBM") was founded through the merger of China National Building Materials Group Corporation and China National Materials Group Corporation with the approval of the State Council, and is a central state-owned enterprise under the direct management of the State-owned Assets Supervision and Administration Commission of the State Council.

CNBM is the largest comprehensive building materials group, a leading new materials developer and integrated service provider throughout the world. It has been listed on the Fortune Global 500 for twelve consecutive years and ranked 196<sup>th</sup> in 2022. As at the end of 2021, CNBM's total assets amounted to RMB 652.24 billion, with a total number of employees of about 207,000. In 2021, CNBM achieved

revenue of RMB 415.51 billion. CNBM holds 14 listed companies, two of which are abroad. The Group is the largest supplier of cement, ready-mixed concrete, plasterboard, fiberglass, wind turbine blades, cement & glass, and engineering & technical services. It is also one of the leading producers of ultra-thin electronic glass, high-performance carbon fibers, lithium battery separators, ultra-high voltage electrical porcelain and so on.

As a scientific and technological group, CNBM possesses the strongest strength in building materials and new inorganic nonmetallic materials. CNBM takes possession of 26 national-level scientific research and design institutes, 38,000 scientific researchers and engineering technicians, 55 national industrial quality inspection centers and the most authoritative inspection and certification bodies in the industry, 11 national key laboratories and engineering (technical) research centers and 19 standardization technical committees with more than 17,600 patents, 7 first prizes of the National Awards for Scientific and Technological Progress and 4 prizes of China Grand

Awards for Industry.

As an international company, CNBM has been at the forefront of "going global" and the Belt and Road Initiative of the Chinese building material industry. It holds a 65% share in the international market of cement and glass engineering projects, and has investment in the United States, Germany, India, Mongolia and African countries, moving towards the center of the world's stage of building materials.

CNBM has been officially converted into a state-owned capital investment company. Currently, it is speeding up the "three major changes" from asset management to capital management, from building materials to comprehensive materials, and from the local market to the global stage according to the "4335" guiding principles. We work to continuously enhance our competitiveness, innovation capacity, power of control, influence and risk resistance, and develop into a world-class industrial investment group specializing in the material industry with global competitiveness.

As at the end of 2021

Total assets

RMB **652.24**

billion

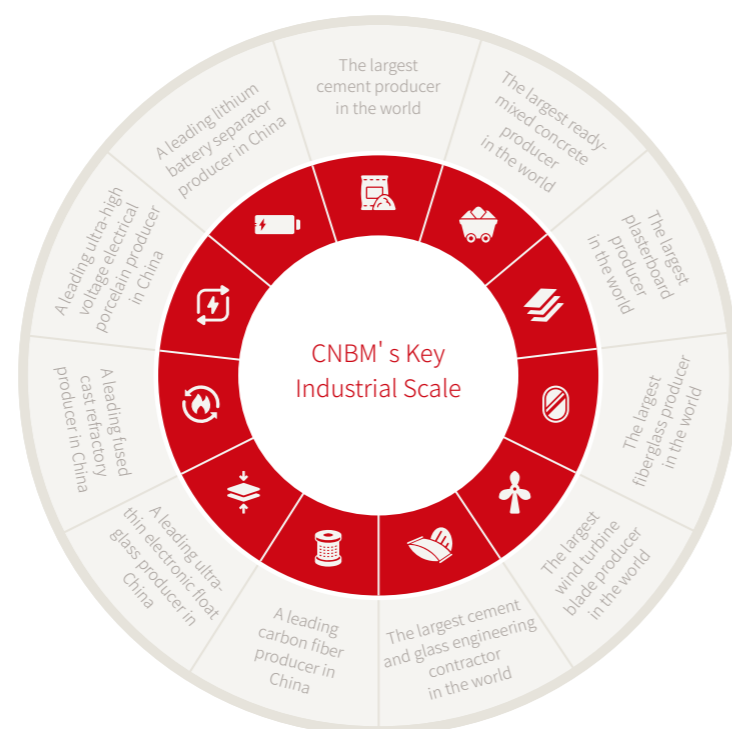
Annual revenue

RMB **415.51**

billion

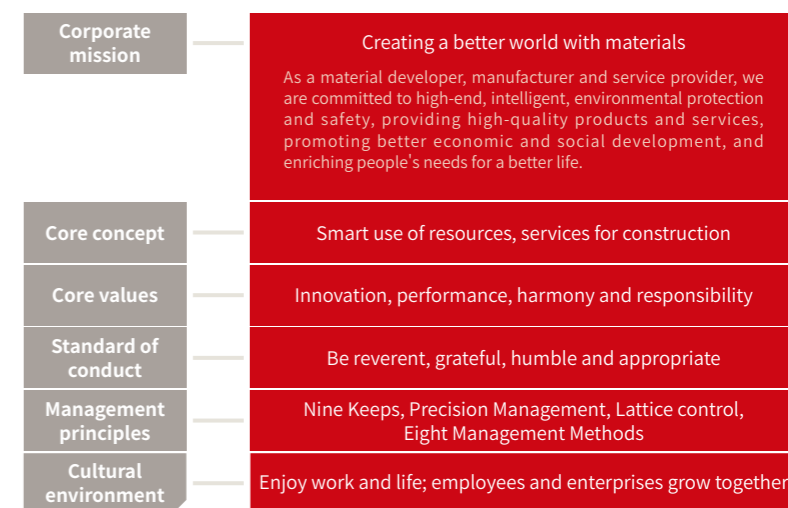
Total number of employees

**207,000**



## Corporate Culture

In the process of development, CNBM has created a brilliant history of staying true to its original aspiration, and pioneering a business with painstaking efforts. With its profound cultural deposits and high sense of responsibility as a state-owned enterprise, it has created a unique cultural system. This cultural system encourages its employees to overcome difficulties, stand on their own feet, and continuously supply advanced products and specialized services for China and the rest of the world. Meanwhile, it also turned itself into a global leader in the building materials industry from a grassroots central enterprise.



## Development Strategy

Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, CNBM actively puts the guiding principles from the 19<sup>th</sup> CPC National Congress and the Second, Third, Fourth, Fifth and Sixth Plenary Sessions of the 19<sup>th</sup> CPC Central Committee into action, resolutely implements the principles delivered in Xi Jinping's important statement on the reform and development of state-owned enterprises and Party building, relies on the new development stage, acts on the new development concept, fosters a new development paradigm, adheres to the general principle of pursuing progress while ensuring stability, focuses on promoting high-quality development and supply-side structural reform, and enhances its competitiveness, innovation capacity, power of control, influence and risk resistance through development driven by innovation, empowered by reform, facilitated by internationalization and guided by Party building.



## Development Objectives



## Management Team

According to the Company Law, the requirements for standard operation of the board of directors and the needs of the work and the expertise of the external directors, the Board of Directors has 4 special committees, of which the Remuneration and Appraisal Committee and Audit and Risk Management Committee consist solely of external directors.

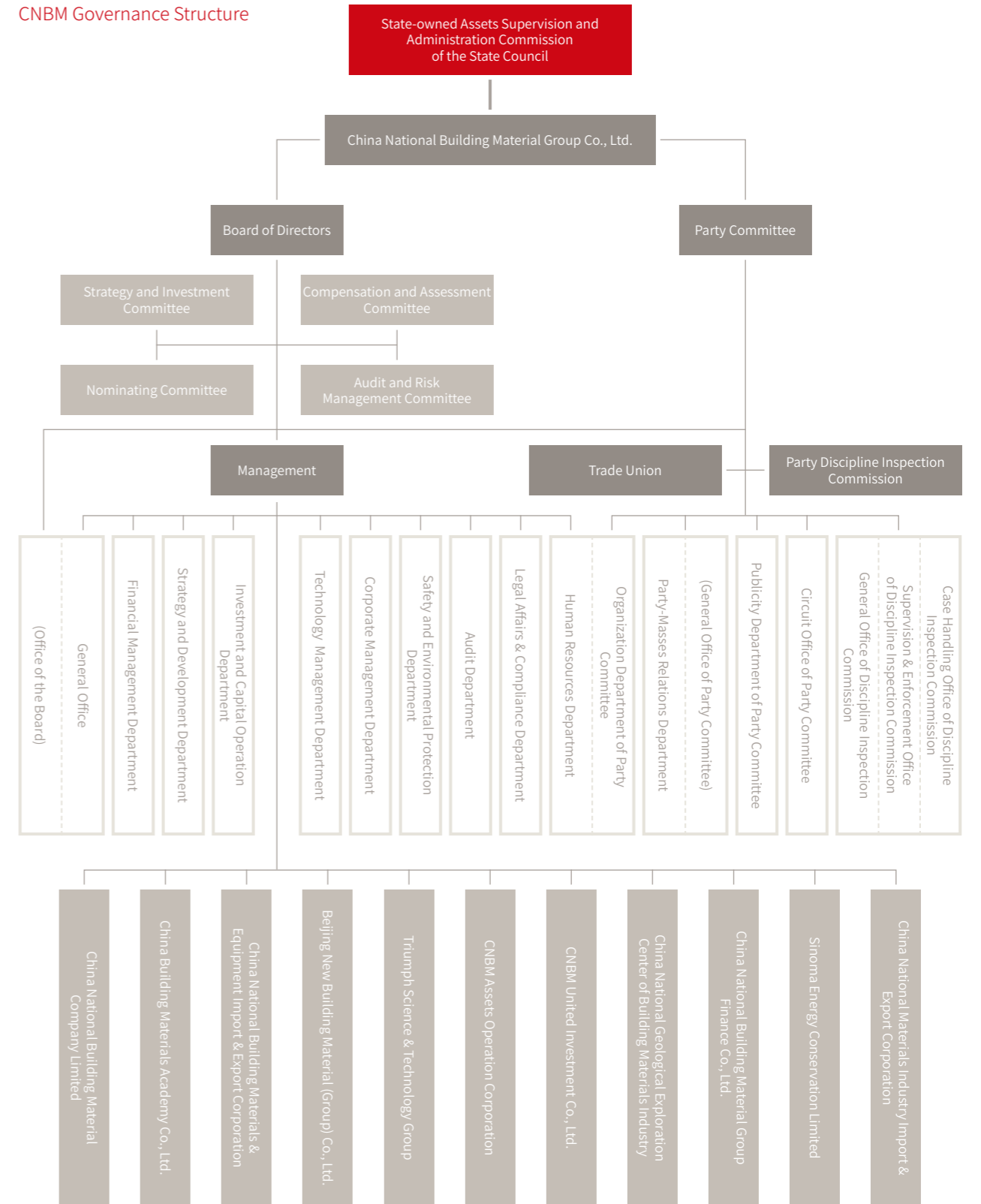
### Board of Directors

|   |  |  |
|---|--|--|
| <b>Zhou Yuxian</b><br>Chairman          | <b>Li Xinhua</b><br>Director             |  |
| <b>Yang Ya</b><br>External Director     | <b>Liu Xinquan</b><br>External Director  | <b>Xu Wenrong</b><br>External Director |
| <b>Xia Xiao'ou</b><br>External Director | <b>Chen Niangao</b><br>External Director | <b>Sun Lishi</b><br>Employee Director  |

### Management

|   |   |  |  |   |
|---|---|--|--|---|
| <b>Zhou Yuxian</b><br>Party Committee Secretary<br>Chairman                       | <b>Li Xinhua</b><br>Party Committee Deputy Secretary<br>Director<br>General Manager | <b>Sun Lishi</b><br>Party Committee Deputy Secretary                           | <b>Zhan Yanjing</b><br>Party Committee Standing Member<br>Chief Accountant | <b>Yang Jie</b><br>Party Committee Standing Member<br>Secretary of Discipline Inspection Commission |
| <b>Chang Zhangli</b><br>Party Committee Standing Member<br>Deputy General Manager | <b>Wang Yumeng</b><br>Party Committee Standing Member<br>Deputy General Manager     | <b>Wei Rushan</b><br>Party Committee Standing Member<br>Deputy General Manager | <b>Peng Shou</b><br>Chief Engineer   | <b>Fu Jinguang</b><br>Board Secretary<br>General Manager Assistant                                  |
| <b>Lu Xinhua</b><br>General Counsel   | <b>Gao Zehuai</b><br>Deputy Chief Economist   | <b>Qu Xiaoli</b><br>General Manager Assistant<br>Deputy Chief Accountant       |  |   |

## CNBM Governance Structure





## Main Lines of Business

### ■ Basic Building Materials



#### ❖ Cement

The annual production capacity of cement is 518 million tons and that of ready-mixed concrete is 475 million m<sup>3</sup>, both ranking first in the world.

#### Leading Enterprises

Xinjiang Tianshan Cement Co., Ltd., North Cement Company Limited, Gansu Qilianshan Cement Group Co., Ltd., Ningxia Building Materials Group Co., Ltd.



#### ❖ Float Glass

CNBM's annual production capacity of high-quality float glass reaches 46.76 million weight cases.

#### Leading Enterprise

Triumph Science & Technology Group

### ■ New Materials

#### ❖ Plasterboards and Waterproof Materials

##### Lightweight Building Materials and Waterproof Materials

The annual production capacity of plasterboards is 3.358 billion m<sup>2</sup>, ranking first in the world. We have high-end brands in the international market and proprietary intellectual property rights, as well as three business sectors: 'whole-house' indoor systems integrating plasterboards, frames, universal boards and mineral wool boards, external energy conservation and thermal insulation systems with fiber cement siding, and waterproof systems combining powder, coating and mortar. We provide green building system solutions for public buildings and family housing with our complete product system.

#### Leading Enterprises

Beijing New Building Material Public Limited Company, Taishan Gypsum Co., Ltd., and BNBM Waterproofing Co., Ltd.



#### ❖ Wind Turbine Blades

We can produce 19.66GW of blades for MW-level wind turbines every year, ranking first in the world, including over 100 types of products with the categories ranging from 1 MW to 8.5 MW, and the blade length varying from 34 meters to 90 meters. We possess blade production bases in Funing, Pingxiang, Handan, Xilinhot, Hinggan League, Baicheng, Lianyungang, Shenyang, Jiuquan, Baotou, Hami, Yuxi and Anyang, a research and development center in Germany and a national blade testing center.

#### Leading Enterprises

Sinoma Wind Power Blade Co., Ltd. and Lianyungang Zhongfu Lianzhong Composites Group Co., Ltd.



#### ❖ Fiberglass

The annual production capacity of fiberglass is 3.39 million tons, ranking first in the world. We have the world's largest alkali-free tank furnace production line with an annual capacity of 150,000 tons, and packaged technologies for intelligent and green manufacturing of alkali-free fiberglass and HSHM fiberglass with proprietary intellectual property rights.

#### Leading Enterprises

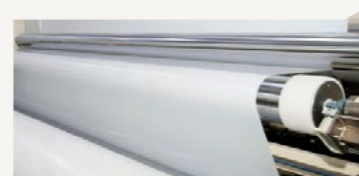
China Jushi Co., Ltd., Taishan Fiberglass Inc., Sinoma Jinjing Fiberglass Co., Ltd.

#### ❖ Lithium Battery Separator

The annual production capacity of lithium battery separator is 1.43 billion m<sup>2</sup>, with a market share of over 12% ranking second in China. Sinoma Lithium Battery Separator Co., Ltd. is the only large-scale enterprise in China that adopts wet two-way synchronous stretching process, which has accumulated valuable practical experience for realizing localization of production equipment and greatly improving production efficiency. Currently, it has four production bases in Tengzhou (Shandong), Changde (Hunan), Changsha (Hunan) and Hohhot (Inner Mongolia).

#### Leading Enterprise

Sinoma Lithium Battery Separator Co., Ltd.



#### ❖ New Glass Materials

We can produce 27.17 million m<sup>2</sup> of ultra-thin electronic glass, 44.19 million pieces of ITO conductive film glass and 39.15 million pieces of display modules; 119 million m<sup>2</sup> of photovoltaic glass every year.

#### Leading Enterprise

Triumph Science & Technology Group

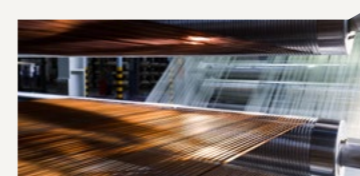


#### ❖ Carbon Fiber

With a total production capacity of 11,500 tons, Zhongfu Shenyang Carbon Fiber Co., Ltd. has taken the lead in tackling dry-jet wet spinning technology and core equipment autonomy in China, and built the largest and most technologically mature 1,000t industrial production line of carbon fiber by dry-jet wet spinning technology in China. In September 2021, with the support of the Group, China's first 10,000t carbon fiber production base invested and built by Zhongfu Shenyang was put into production in Xining, Qinghai Province, realizing for the first time the design of a single line annual output of 3,000t high-performance carbon fiber and the independent control of high-end complete sets of technology. Xining 10,000t carbon fiber base won the top ten super projects of central enterprises in 2021.

#### Leading Enterprise

Zhongfu Shenyang Carbon Fiber Co., Ltd.



#### PV Business

With a focus on thin-film solar products and technologies, we have a production capacity of 3GW thin film solar cell modules, ranking first in China. We are committed to the integrated application of new energy materials and distributed energy, as well as carrying out the R&D and promotion of new-energy housing and establishing a whole industrial chain of BIPV (Building Integrated PV). We have set up a 300 MW CIGS thin-film solar cell production base and a 200 MW CdTe power generation glass production base.

#### Leading Enterprises

Triumph Science & Technology Group, China National Building Materials International Engineering Co., Ltd.

#### ❖ Advanced Ceramics and Artificial Crystals

The annual production capacity of UHV electrical porcelain is 50,000 tons. Currently, we have new functional materials, such as silicon nitride ceramics, high-voltage electrical porcelains, silicon carbide ceramics and quartz ceramics, which have excellent temperature resistance, corrosion resistance, wear resistance and erosion resistance. They can replace metal materials and organic polymer materials for harsh working environments and are widely used in energy, aerospace, machinery,



### ■ Engineering & Technical Services



#### ❖ Engineering & Technical Services

We have captured dominant global market shares in cement and glass engineering and cogeneration engineering. We are now expanding our market shares in such fields as new glass, new energy, new materials.

#### Leading Enterprises

Sinoma International Engineering Co., Ltd., China Triumph International Engineering Co., Ltd., Sinoma Energy Conservation Limited, Hefei Cement Research & Design Institute Co., Ltd. and Qinhuangdao Glass Industry Research and Design Institute Co., Ltd.

automobile, electronics, chemical industry and other fields. Meanwhile, we have artificial crystals, including nonlinear optical crystals, scintillation crystals and infrared window crystals, widely used in the fields of electronics, laser, communication, energy and biology.

#### Leading Enterprises

Sinoma Advanced Materials Co., Ltd.

Responsibility

# Featured Story

## Building Materials to Facilitate the Dual Carbon Goals

Carbon peak and neutrality are the inherent requirements of high-quality development of the building materials industry, as well as the only way for its sustainable development. Meanwhile, it is a vital opportunity for the building materials industry to achieve a new leap. Towards a new journey, the Dual Carbon Goals will promote the building materials industry to a new stage of high-quality development marked by green and low-carbon development, thus producing a sustained, systematic and overall impact on the development and operation of the building materials industry.

**Achieving carbon peak and neutrality is an extensive and profound economic and social systemic change. We should incorporate carbon peak and neutrality into the overall layout of ecological progress. With down-to-earth efforts, we are on track to achieve carbon peak by 2030 and carbon neutrality by 2060 as scheduled.**

— General Secretary Xi Jinping

The Opinions of the CPC Central Committee and the State Council on Accurately and Comprehensively Implementing the New Development Concept to Achieve Carbon Peak and Neutrality was released, pointing out that the realization of carbon peak and neutrality is a major strategic decision made by the CPC Central Committee with Xi Jinping as the core to coordinate the domestic and international situations, an inevitable choice to address major resource and environmental constraints and achieve sustainable development of the Chinese nation, as well as a solemn commitment to building a community with a shared future for mankind.

The SASAC issued the Guiding Opinions on Promoting the High-quality Development of Central Enterprises to Achieve Carbon Peak and Neutrality, proposing that central enterprises should be solidly promoted to play an exemplary and leading role in promoting national carbon peak and neutrality.

As the only central enterprise in the building materials industry and the largest cement enterprise in the world, CNBM resolutely implements the requirements and tasks put forward by the CPC Central Committee and the State Council for central enterprises, thoroughly practices the new development concept, and unswervingly follows the path of ecological priority and green and low-carbon development, in order to promote the high-quality development during the 14<sup>th</sup> Five-Year Plan period, and lay a solid foundation for the goals of carbon peak and neutrality in the industry.

## Innovation-Driven Strategy to Practice Carbon Reduction

Driven by innovation, we continue to increase technological investment in the fields of energy conservation, carbon reduction and pollution control. Relying on the state key laboratories, a number of green technological achievements have been made, and green technologies such as new low-carbon cement products, raw material substitution, and pollutant emission control have been widely popularized to achieve energy conservation, pollution control and carbon reduction throughout the production process. Meanwhile, with a series of methods such as innovative management and intelligent technologies, industrial energy efficiency has been continuously improved, opening a new mode of energy conservation and emission reduction.

### Low Carbon Technology Research

The "open competition mechanism" adopted by the Group supported 11 low-carbon projects, involving cement, glass, new energy, etc. The "Digital Research and Development Platform for Cement-based Materials" tackled original technologies such as the design and preparation of new low-carbon cementitious materials; "key technology and engineering of new low-carbon cement-based materials preparation" formed the regulation technology of coexistence of C2S, C5S2S and C4A3S, and obtained the key technologies for industrial stable production of two kinds of clinker; "complete technology and engineering application of thin-film solar cells" focused on the key preparation technology of CIGS/perovskite laminated multi-junction solar cell modules with high efficiency and low cost, and the conversion efficiency exceeded 20%.



CTC Group Research Lab

Oxygen-fuel combustion ultra-white glass production line of China Building Materials (Hefei) New Energy Co., Ltd.



### Oxygen-fuel Combustion Technology

China Triumph International Engineering Co., Ltd.(CTIEC) and Tianjin Cement Industry Design & Research Institute have adopted different technical routes to tackle the integrated set technology and key equipment of cement oxygen-fuel combustion coupling carbon capture at the same time, and solved three major scientific difficulties such as multiphase chemical reaction mechanism, material-energy exchange, migration and transformation law of multi-pollutant components and emission reduction mechanism under O<sub>2</sub>/CO<sub>2</sub>. The oxygen-fuel combustion ultra-white glass production line developed by China Building Materials (Hefei) New Energy Co., Ltd., is the world's largest internationally advanced single-unit production line. Compared with the traditional air-assisted kiln, the melting rate is increased by more than 10%, the emission of nitrogen oxides is reduced by more than 70%; about 5,195 tons of standard coal is saved every year, and the kiln life can be extended to more than 8 years.

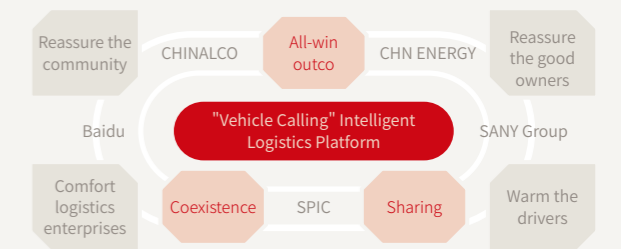
### Intelligent Factory

The production line of China United Cement Tai'an fully embodies advanced modern comprehensive technologies such as "Internet plus", informatization and intelligence, and comprehensively upgrades cement technology and manufacturing. By virtue of intelligent mines, intelligent quality control, intelligent logistics, intelligent equipment management, intelligent energy management and intelligent production control, etc., the risk of equipment management is effectively reduced and the efficiency of production system is improved. Since its operation in 2015, the combined coal consumption per unit clinker of China United Cement Tai'an dropped from 99.98kgce/t to 93.8kgce/t, and the combined electricity consumption per unit clinker dropped from 49.01 kWh/t to 45 kWh/t.



A panoramic view of Green Intelligent Factory of China United Cement Tai'an

### "Vehicle Calling" Intelligent Logistics Platform



"Vehicle Calling" Intelligent Logistics Platform

Based on the business mode of "Industrial Internet + Network Freight", the "vehicle calling" platform built by the Group built a modern logistics industry ecosystem integrating logistics transportation, aftermarket and supply chain finance. The platform has more than 800,000 registered vehicles, 250 million tons of online business, RMB 17 billion of total commodity transactions and nearly 1,000 cooperative enterprises. It has addressed such difficulties as low efficiency of logistics and transport scheduling, high transport cost, difficult transport management and unguaranteed cargo safety for factories, logistics carriers and truck drivers, improved the resource matching efficiency, reduced the unit logistics cost by RMB 2-5/ton, and greatly reduced the carbon emissions and energy consumption in the process of freight transport.



## Energy Substitution to Create a Green Future

We have actively used Building Integrated Photovoltaic (BIPV) to increase the utilization of solar energy, and accelerated the development of new materials such as carbon fiber, glass fiber, wind turbine blades, copper indium gallium selenide and cadmium telluride power glass, lithium battery separator, etc. We have tapped the potential of waste heat recovery, and continuously expanded the advantages of energy substitution, thus reducing the consumption of fossil energy. Meanwhile, cement enterprises were encouraged to extend their industrial chain and take the natural advantages of the cement industry to reduce carbon emissions, such as co-disposal of hazardous waste like municipal sludge, municipal garbage and fly ash from garbage incineration in cement kilns.

10MW thin-film BIPV application demonstration project - Chengdu 8.5-generation TFT-LCD ultra-thin float glass substrate production line



### Thin-film Building Integrated Photovoltaic (BIPV)

March 2021 marked the first anniversary of operation of the single-unit application demonstration project of 10MW thin-film BIPV built by Triumph Science & Technology, which is the world's largest single-unit application demonstration project of thin-film BIPV to date. During the 25 years of operation, the cumulative revenue of the project will be around RMB 220 million, around 117,000 tons of coal will be saved, and around 265,000 tons of CO<sub>2</sub> emissions will be reduced, making brilliant contributions to carbon peak and neutrality. This project is built on the plant roof and wall of the key special 8.5-generation TFT-LCD ultra-thin float glass substrate production line of Triumph Science & Technology. Covering a building area of 120,000 m<sup>2</sup>, the single plant, together with Apple Park in the United States, is listed as the world's largest 10 million-kilowatt self-generating engineering project.

### High-performance Carbon Fiber

In September 2021, with the support of the Group, China's first 10,000-ton carbon fiber production base invested and built by Zhongfu Shenying Group was put into operation in Xining, Qinghai Province. The project investment was RMB 5 billion in total, realizing for the first time the design of a single line annual output of 3,000t high-performance carbon fiber and the independent control of high-end complete sets of technology. The first batch of carbon fibers can reach the domestic leading level of T700 and T800, which are suitable for pressure vessels, photovoltaics and other industrial fields. Driven by the policy of carbon peak and neutrality, carbon fibers will increasingly boost the development of new energy industries such as photovoltaic and wind power.



Xining 10,000-ton carbon fiber base was rated as Top Ten Super Projects of Central Enterprises in 2021

### Waste Heat Power Generation

The Group has vigorously developed waste heat power generation from cement kilns, with a cumulative installed capacity of over 2,000 megawatts, with an annual energy output exceeding 9 billion kWh, equivalent to reducing carbon emissions by around 5.23 million tons. In 2021, the Group newly signed 7 cement and glass waste heat power stations and 4 grid-connected power generation projects, which effectively improved the multipurpose utilization rate of waste heat and reduced energy consumption.

### Waste Alternative Fuel

Centering on the development of circular economy in the 14<sup>th</sup> Five-Year Plan period and the Group's Dual Carbon Goals, Sinoma International has deepened industrial development in the utilization of solid waste building materials, and conducted in-depth research in such fields as solid waste comprehensive utilization to prepare lightweight aggregate, new building materials, alternative fuels, biomass fuel and clean energy. Within the Group, 12 cement enterprises under CNBM Cement Company Limited, Tianshan Cement Co., Ltd., China United Cement Corporation, South Cement Company Limited, etc. have built domestic garbage, hazardous waste, sludge and contaminated soil projects, and provided alternative fuel solutions and free diagnosis for more than 20 cement enterprises within the Group. By 2021, the projects built in the Group have disposed of over 2.8 million tons of domestic garbage, over 130,000 tons of hazardous waste and 450,000 tons of polluted soil, saving more than 400,000 tons of standard coal for cement enterprises in total.



Project of co-disposal of 500t/d domestic waste using cement kilns of Jiangsu Hantian Cement Co., Ltd.

## Carbon Sequestration and Energy Storage to Deepen Emission Reduction

Based on our comprehensive business advantages, we continued to promote industrial upgrading, actively constructed green mines and ecological factories, and built a number of "factories in gardens, in forests and on grasslands". In 2021, the number of national green factories and mines increased to 90 and 48, respectively, which laid a good foundation for carbon neutrality and trading. Meanwhile, we strengthened the technology of carbon sequestration, and increased the R&D and application of technologies such as carbon capture, carbon utilization, and carbon sequestration, so as to achieve technological breakthroughs to drive enterprise and industrial transformation, which is a method for building a "carbon sequestration" barrier.

### Building an Ecological Benchmark

Chengxian Qilianshan Cement Co., Ltd. integrated green development into every link of production and management, completed the water diversion project, built automatic domestic sewage treatment stations, and realized the "zero discharge" of production and domestic water. Through technical transformation, the power consumption of cement grinding process decreased by 3.74 kWh. Currently, it has become the first building materials enterprise in Northwest China to win the titles of "National Green Factory", "National Green Mine", "100 Energy-Saving and Emission Reduction Demonstration Enterprises", "Top Ten Mine" in cement industry and "Selected Products of Green Building".



A panoramic view of Chengxian Qilianshan Cement Co., Ltd.

### R&D of Carbon Sequestration Technology

Suzhou Concrete and Cement Products Research Institute Co., Ltd. carried out research and application demonstration on key low-carbon technologies such as improving CO<sub>2</sub> mineralization performance of concrete materials and rechargeable cement-based materials, aiming at key concrete components and products, ready-mixed concrete and energy-storage cement-based materials, breaking through CO<sub>2</sub> deep mineralization technology of concrete and its key components. CTIEC and Dalian University of Technology signed the Agreement on Establishment and Division of Labor of National Energy Carbon Capture and Marine Storage R&D Center, and cooperated with Shanghai Triumph Energy Conservation Engineering Co., Ltd. to carry out cooperative development and demonstration application of carbon reduction, absorption and capture.



## Cooperation and Linkage for Common Progress

We always keep in mind the mission and great trust bestowed by the country, the times and the industry, and strive to be the leader of carbon peak and neutrality. We have strengthened communication and cooperation with cooperative enterprises and research institutions in the industry, jointly tackled the difficult problems of dual-carbon technology and standards, strengthened internal coordination and communication, started the path analysis of carbon peak and neutrality, implemented scientific, reasonable and effective carbon reduction actions, and gathered talents and collective efforts, so as to promote the industry to achieve carbon peak and neutrality.

### 🔗 The First National Dual-Carbon Public Service Platform for the Raw Material Industry

Led by the Group, and jointly built by China Academy of Sciences, SINOPEC, CITIC Group, CNIS, Shougang Group, Tongji University, etc., the first national dual-carbon public service platform for raw materials tackles key problems in dual-carbon key & core technologies, green low-carbon technology verification platforms, the basic database for carbon footprint accounting of green low-carbon products, the evaluation and inspection of low-carbon products, etc., so as to serve the green and low-carbon development in key areas such as Beijing-Tianjin-Hebei, Yangtze River Delta, Greater Bay Area and western regions.

### 🔗 CSTM Carbon Emission Committee

Approved by China Materials and Testing Group Standard Committee (CSTM), CNBM took the lead in establishing the Carbon Emission Standardization Committee, with its secretariat affiliated to CTC Group. In the light of the national demand and the development trend of the industry, the Committee will conduct joint research on low carbon, zero carbon, negative carbon, CCUS, substitution of hydrogen fuel and key technical standards to quicken the pace of formulating a number of high-level, high-quality, authoritative and widely applied carbon emission standards, and explore a new development path to promote the implementation of China's Dual Carbon Goals through standardization.

### 🔗 New Energy and Green Building Application Research Institute

Founded by Triumph Science & Technology, New Energy and Green Building Application Research Institute vigorously promoted the extension and application of thin-film power generation glass in the field of BIPV and standard formulation, fully cleared the channel of the upstream and downstream industrial chains, made joint efforts to promote the development of green low-carbon building industry and the synergy of the whole green energy industry chains, and thus contributed to the Dual Carbon Goals.



China's first CdTe power generation glass integrated project in a city center -- Shanghai Songjiang Triumph Robot Building



China's first large-scale CdTe power generation glass ground power station -- large-scale mountain restoration power station project in Chicheng County, Zhangjiakou

## Participate in the Market to Construct Together

We responded to national policies to actively deal with carbon trading. Internally, we prepared to build a carbon asset management system; externally, we leveraged new materials to explore and develop carbon sink projects, so as to promote carbon emission reduction by market-oriented means. Besides, we actively used the national climate investment and financing and green financial policies, explored green financing, revitalized carbon assets and promoted carbon emission reduction in the industry. All member enterprises of the Group issued a total of RMB 3.5 billion of green and carbon neutrality concept bonds in 2021.

In 2021,

all member enterprises of the Group issued green and carbon neutrality concept bonds totaling

**RMB 3.5**

billion

In 2021, Sinoma International and South Cement Company Limited set up a "Carbon Emission Digital Assessment Platform", which established a perfect carbon footprint calculation model system and a rich basic database, realizing the fine calculation, monitoring and early warning of the carbon footprint throughout the life cycle of the factory. Currently, the platform has been applied in Huaikan South Cement and Chongzuo Aggregate projects.

**Carbon Emission Digital Assessment Platform**

**Obtaining Product Carbon Label Evaluation**

In 2021, the SCD clinker conveyor, the main product of Sinoma (Shangrao) Machinery Limited Company, was awarded the "Product Carbon Label Evaluation Certificate" by China Electronic Energy Saving Technical Committee, which helped the company to upgrade and transform pertinently by comparing carbon footprint data in various energy, resources and production process, so as to achieve energy conservation, consumption reduction and emission reduction, establish a green and low-carbon competitive advantage, and provide information reserves for carbon emission verification, carbon emission permit trading and green enterprise certification, which marked a vital breakthrough in energy conservation and emission reduction in the building material machinery industry.





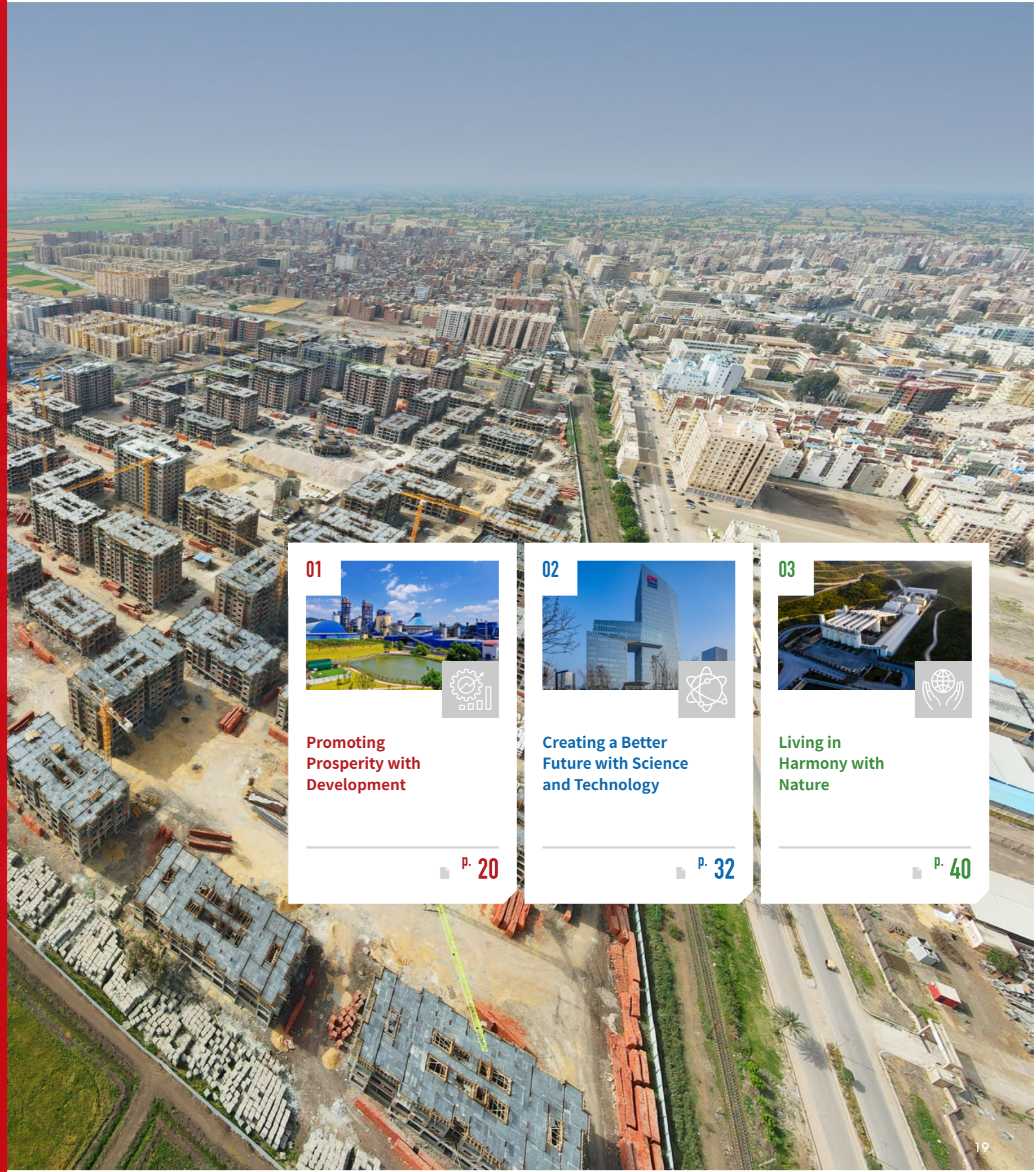
Sinoma International's House Building Project

# Smart Use of Resources to Create Sustainable Value

Part

I

Reponse to the Sustainable Development Goals (SDGs) of the United Nations



**01**  
**Promoting Prosperity with Development**



p. 20



**02**  
**Creating a Better Future with Science and Technology**



p. 32



**03**  
**Living in Harmony with Nature**



p. 40

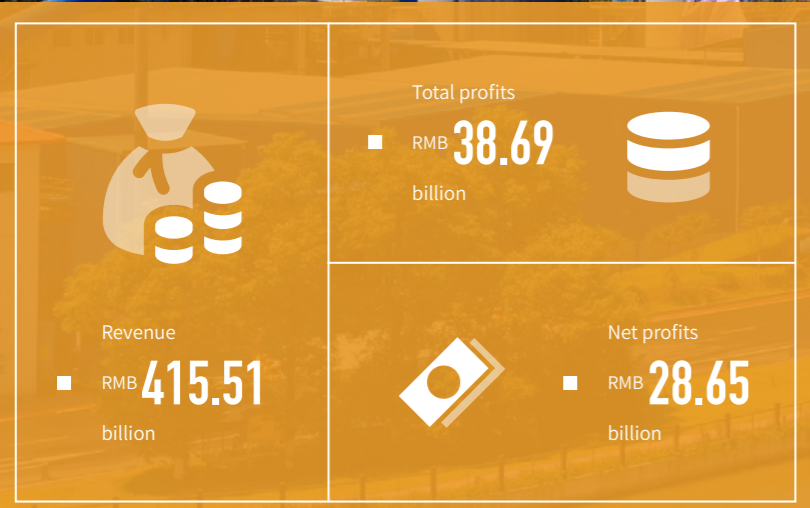




01

## Promoting Prosperity with Development

In 2021, in the face of the complicated and severe external environment and arduous development tasks, CNBM seriously implemented the decisions and arrangements of the CPC Central Committee and the State Council, united as a whole group and struggled to overcome difficulties, unwaveringly strived for progress and improved quality while maintaining stability, showed perseverance and outstanding fighting will, fully exceeded the business objectives issued by the State-owned Assets Supervision and Administration Commission, continuously deepened the enterprise reform, comprehensively strengthened Party building, promoted the high-quality development of the Group to achieve outstanding results, made positive contributions to "stability on six fronts and security in six areas", and got the 14<sup>th</sup> Five-Year Plan to a good start.



📍 CNBM's Factory Area in Pingxiang



## Proud Results

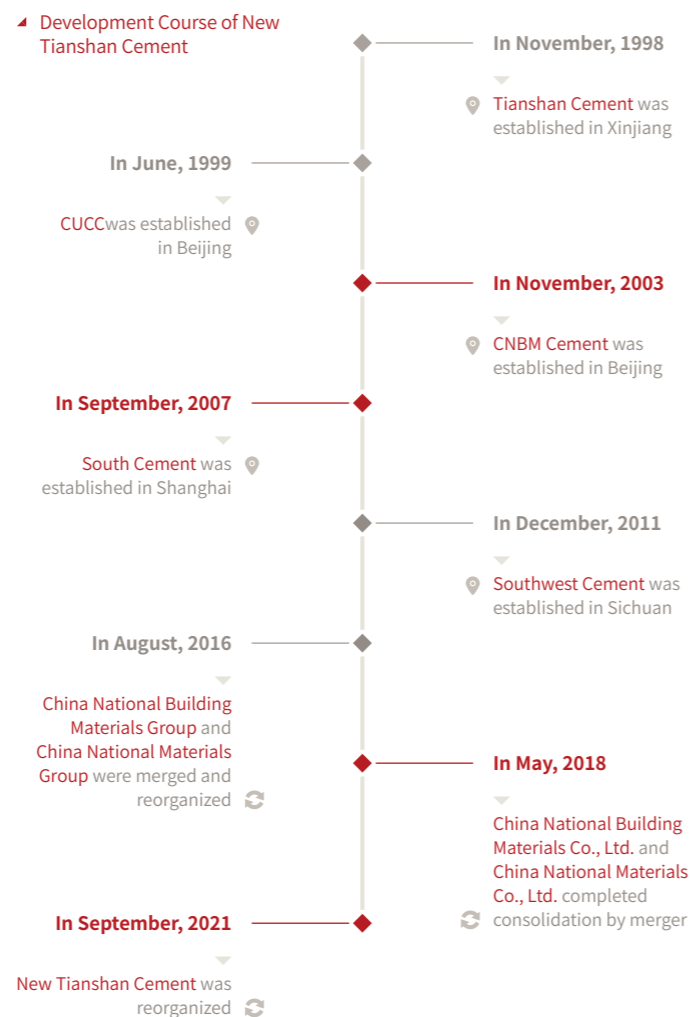
In 2021, we responded calmly to the complicated macroeconomic and industrial situation, and made efforts to overcome the difficulties and challenges brought about by the impact of the global pandemic the rising factor costs and the tightening of dual control for energy consumption. We implemented the two "4335" guiding principles, highlighted strategic and capital management and control, promoted more perfect management and control modes, a clearer business layout and a more optimized capital layout, and achieved substantial growth in major operating indicators and outstanding performance of major products. In 2021, we achieved revenue of RMB 415.51 billion with a year-on-year growth of 5.4%, net profits of RMB 28.65 billion with a year-on-year growth of 42.3%, and total profits of 38.69 billion with a year-on-year growth of 26.4%, creating the best performance in history and fully exceeding the business objectives issued by SASAC.

## Integration and Upgrading of Cement Business

We actively promoted industrial integration and optimization and extended the coordinated development of industrial chain. In 2021, Tianshan Cement was reorganized; it completed the largest transaction project of issuing shares to purchase assets in the history of A shares, and built a listed cement company with the largest global business scale, relatively complete industrial chain and nationwide layout. It actively carried out cement reduction and replacement to cut overcapacity by 5.05 million tons; 67.76 million tons of aggregate were added in the upstream extended industrial chain, and 24.79 million tons of commercial mixed production capacity were added in the downstream extended industrial chain, which realized the vertical integration and coordinated development of the industrial chain.

### CNBM: The cement company with the largest business scale and a market value of RMB 100 billion in the world unveiled

On December 11, 2021, CNBM Cement Business Integration Conference was held in Beijing. After 15 months and 6 days, CNBM injected its main cement assets into Tianshan Cement, a listed company. This transaction of purchasing assets amounted to RMB 98.1 billion, which created the largest transaction scale in the history of A shares. The integration of cement business is the third step in the "three-step" plan of the merger and reorganization of the former China National Building Materials Group and the former China National Materials Group in 2016. Upon the completion of this step, a listed cement company with the largest global business scale and a market value of RMB 100 billion will be born in the cement sector of CNBN. The completion of this step also means that CNBN will start a new round of deep integration in the cement industry.



## New Materials are Booming

We rapidly developed the sector of new materials, continuously increased the proportion of contribution in net profits, promoted the international development of new materials, maintained a leading position in plasterboards, glass fiber and wind turbine blades in the world, and continuously promoted the expansion and upgrading as well as the global layout of overseas projects. In 2021, the production capacity and sales volume of carbon fiber, glass fiber, plasterboards, lithium battery separators and other products of the Group increased significantly on a

year-on-year basis. Zhongfu Shenying built the largest 10,000-ton carbon fiber production base in China, China Jushi built a new glass fiber production line with an annual output of 120,000 tons in Egypt and Sinoma Science & Technology added a new lithium battery separator project with a design capacity of 2.6 billion m<sup>2</sup>; Triumph Science & Technology's 30-μm flexible glass completed market certification and Generation 8.5 TFT-LCD glass substrate achieved stable mass production; CNBM's Plasterboard Line in Tanzania was completed and put into operation.

### CNBM: Chairman Zhou Yuxian introduces aspiration token of glass industry in China

In 2021, on the occasion of the centenary of the founding of the Communist Party of China, the State-owned Assets Supervision and Administration Commission of the State Council and the Central Radio and Television General Station jointly launched a 100-episode micro-documentary "Token for A Hundred Years". It introduced the development process of enterprises and inherited red genes with "Red Token" as a starting point.

The column group chose the first bulletproof glass used by China National Building Materials Group on Hongqi cars as a "token". As a token narrator, Chairman Zhou Yuxian introduced the aspiration token of China's glass industry and the course of innovation and development. At the launching ceremony of the column, Chairman Zhou Yuxian paid tribute to the older generation of scientific and technological workers and said that it is necessary to inherit the spirit of independent research and development, innovation and self-improvement contained in the "red token", create a better world with materials, and fulfill the responsibilities of a central enterprise with hard work.





The photoelectric conversion efficiency of the 30x30 cm<sup>2</sup> copper indium gallium selenide (CIGS) solar cell module produced by Triumph Science & Technology reached 19.8%, setting a world record

## Promoting Engineering Services Steadily

On the basis of maintaining our leading position in the world, we further expanded our main business, laid out new racing tracks, and made great efforts to stimulate the incremental potential of engineering and technical services in aspects such as capacity replacement. In 2021, the Group's assets in mining engineering and mining services were integrated, four engineering service enterprises were integrated, the value reshaping and layout optimization of the engineering technology service industry chain were promoted and the cement engineering ranked first in the world was further consolidated with Sinoma International as the main body. In 2021, the Group signed new project contracts for RMB 76.09 billion with a year-on-year increase of 23%. Sinoma International signed new engineering construction contracts of RMB 36.695 billion with a year-on-year increase of 20%; 19 projects were successfully launched. CTIEC signed new project contracts of RMB 1,645,300 with a year-on-year increase of 6.6%.

### Zhongfu Shenying: Innovation leads the development of China's carbon fiber industry

As a leading enterprise in China's carbon fiber industry, Zhongfu Shenying has systematically mastered the T700/800 carbon fiber kiloton scale production technology and T1000 100-ton engineering technology. It has become the first enterprise to realize the key technological breakthrough and independent production of core equipment in dry-jet wet spinning in China, as well as the first enterprise to build an industrialized kiloton dry-jet wet spinning carbon fiber production line.

Zhongfu Shenying built the largest high-performance carbon fiber production base in China



### CNBM: The delivery of restructuring assets in the engineering sector was successfully completed

On October 19, 2021, the asset delivery and management docking ceremony was completed between Sinoma International, China National Building Materials Co., Ltd., China Building Materials Academy and CTIEC. After the joint reorganization, the four enterprises will effectively realize the co-construction and integration of the Group's engineering and technical service industry chain, supply chain and value chain, expand the business scale and influence of Sinoma International in the cement and mining fields, and form a benign interaction of common development, mutual promotion and resource sharing.

On October 9, 2021 at local time, Solar4 220MW Large-Scale Photovoltaic Power Station in Portugal, the photovoltaic power station with the largest installed capacity in Europe was built to generate electricity. The project is the largest photovoltaic power station project generally contracted by Chinese enterprises in Portugal



## Continuously Optimizing Capital Layout

We have accelerated the transformation from managing enterprises to managing capital and improved the management and control mode of state-owned capital with managing stock rights as the core. Focusing on the main business, the Group accelerated industry integration, continuously promoted mergers and acquisitions of cement, waterproof materials, inspection and detection, non-metallic minerals and other businesses and standardized equity investment, increase in capital and share, transactions of property rights and assets, operation of listed companies, debt restructuring and reform, etc.

In 2021, BNBM accelerated the integration of waterproof business and formed 15 production bases of covering the whole country; CNBM's shares were transferred to fully tradable shares and listed on Stock Exchange; Zhongfu Shenying's Science and Technology Innovation Board passed the deliberation of Listing Committee of Shanghai Stock Exchange and was listed; Luoyang Glass raised RMB 2 billion through private placement.

In 2021

Luoyang Glass raised funds for private placement



RMB 2 billion

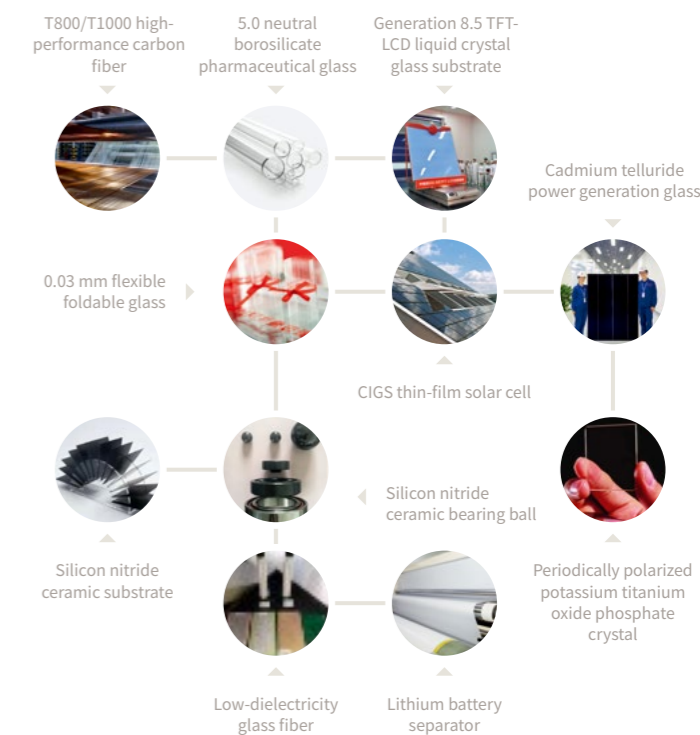


On September 29, 2021, Beijing New Building Materials Waterproof was unveiled as the only central enterprise in China's waterproof industry

### CNBM: The new materials foundation of RMB 15 billion will be injected in the actual investment and operation stage

On July 16, 2021, CNBM (Anhui) New Materials Industry Investment Foundation was established by CNBM with a total scale of RMB 20 billion and the scale in the initial stage of RMB 15 billion. In the future, it will focus on investing in and serving new materials, including fiber and composite materials, glass-substrate materials, film materials, photoelectric materials, crystal materials and other new materials. The foundation is of great significance to help new materials technology successfully cross the "Death Valley" with the highest risk between scientific research and industrialization, introduce market-oriented mechanisms, and develop the Group's new materials business.

### CNBM's new materials business is booming





## Precision Management

To align with world-class management, CNBM continued to deepen "precision management"; adhered to lean operation, price stabilization & quantity expansion, and fine management; reduced costs and increased efficiency; adhered to the streamlined organization; and improved the quality and profitability of the enterprise.

## Lean Operation

We paid close attention to optimizing the market ecosystem and marketing strategy, and further optimized internal coordination. We actively practiced the operation philosophy of "price, cost and benefit", promoted the three major campaigns of "stabilizing operation in East China, driving operation in Northeast China and grasping operation in Southwest China", enhanced market consensus, and stabilized and recovered prices.

We promoted enterprises at all levels to respond quickly to market demand, improved the quantity and quality in marketing, and continuously released the dividends of supply chain coordination, production and research coordination and overseas business coordination within the Group.

## Fine Management

We have been devoted to strengthening management improvement, optimizing capital allocation and reinforcing risk prevention and control. Enterprises at all levels have taken many measures to optimize the financing structure and strengthen the control of hidden liabilities. The financing cost of the

Group has dropped significantly and the scale of perpetual bonds has decreased on year-on-year basis. In 2021, multiple kinds of bonds of the Group Headquarters and CNBM Co.,Ltd. were the best among similar enterprises on the day of issuance.

### Two member enterprises were selected into the list of benchmark management enterprises among key state-owned enterprises of the State-owned Assets Supervision and Administration Commission of the State Council

CNBM attaches great importance to management improvement and has formed management methods with Chinese characteristics in building materials, such as precision management, 2422 pressure reduction, nine adherences, six-star enterprises, eight construction methods, work methods of increasing, saving and reducing, etc., and built the benchmarking management system framework.

#### China Jushi

It adheres to the development mode of "mixed ownership", and the management policy of "seeking development through science and technology, emphasizing brand and market expansion, grasping management to promote efficiency, and relying on talents to increase delayed effect". Guided by the excellent performance management mode, based on standardized management, it has successively integrated quality management, environmental management, occupational health and safety management, measurement management and laboratory accreditation, integration of informatization and industrialization, energy management, intellectual property management, Zhejiang manufacturing and other management systems, formed an excellent integrated management system, and gradually formed a quality management method with enterprise characteristics: pursuing the "12350" quality management method of the whole value chain development and promoting the high-quality development of enterprises.

#### BNBM

It attaches great importance to enterprise management, takes "future of green buildings" as the industrial development concept, implements the strategy of "commanding heights", fully implements the "double-line selection" and "benchmarking management" mode, uses information management system to realize the integration of business and information, and creates a road of self-innovation, transformation and upgrading of Chinese traditional manufacturing industry with "technological innovation and brand building" as the strategic engine.

### Data Review 2021

Overall completion rate of the improvement action to align with world-class management

**93.12%**

**2** enterprises

Beijing New Building Materials Public Limited Company and China Jushi were awarded the "Benchmarking Enterprises for Management Benchmarking of Key State-owned Enterprises"

**51**

newly added enterprises in implementing the integration management system for integration of informatization and industrialization

A total of **118**

enterprises ranked first among central enterprises

**2** enterprises

Bengbu Glass Industry Design & Research Institute and China Triumph International Engineering Company limited (CTIEC) were selected into the list of National Enterprise for Demonstration of Technological Innovation

**2**

enterprises were selected into the sixth batch of individual champions in the manufacturing industry

**1** platform

"CNBM Cement Cloud Industry Big Data Platform" was selected as the pilot demonstration project of big data industry development of the Ministry of Industry and Information Technology

## Streamlined Organization

We pay close attention to reducing losses and controlling losses, disposing of inefficient and ineffective assets, streamlining institutions and personnel, and continuously improving organizational competitiveness. In 2021, 77 loss-making subsidiaries achieved a loss reduction of RMB 3.535 billion, with a loss reduction ratio exceeding 91.11% and 121 legal

persons reduced. The labor productivity of all employees of CNBM increased by 17% on a year-on-year basis and the labor productivity of all employees of Finance Company, Sinoma Import and Export and Sinoma Cement exceeded RMB 1 million per year. "50-person factory and 80-person base" were realized in BNBM Plasterboard Base.



Weaving Workshop of China Jushi's Intelligent Manufacturing Base

## Deepening of Reform

We have made great efforts to speed up the implementation of the three-year reform of state-owned enterprises, thoroughly implemented the guiding principle of "4335", constantly improved the modern enterprise system with Chinese characteristics, and solidly promoted the reform of state-owned capital investment companies. In 2021, more than 85% of the reform tasks of the Group and secondary enterprises were completed. A board of directors was set up in enterprises at all levels, and the institutional reform has developed in depth. The pilot projects such as differentiated management and control of mixed ownership enterprises, three system reforms and double-hundred sci-tech reform have achieved remarkable results and the contractual management of tenure system of managers has been completed at all levels.

CNBM was awarded Grade



**A**

in the key task assessment of the three-year action of central enterprise reform in 2021

CNBM was awarded Grade



**A**

in the business performance appraisal of the heads of central enterprises in 2021 and 2019-2021

## Three-Year Action of State-Owned Enterprise Reform

We comprehensively promoted the three-year action of state-owned enterprise reform, completed the ledger task with high standards, established a full-level information system, and made the reform data and progress all visible.

Data Review 2021

Completion rate of reform tasks of the Group and secondary enterprises

Above  
**85%**



The Group exchanged experiences at relevant meetings of the State-owned Assets Supervision and Administration Commission around key reform tasks such as mixed ownership reform, pilot projects of state-owned capital investment companies, implementation of the functions and powers of the board of directors, and Party building of enterprises in mixed ownership reform.

**15**  
percentage points higher than the goal of SASAC



## Construction of Modern Enterprise System

We formulated a list of 170 rights and responsibilities of the Party Committee, the Board of Directors and the General Manager's Office Board of the Group and established an authorization system from the Board of Directors to the managers. The mechanism for the "three boards" to perform their duties and coordinate their operation is more mature. We formulated a list of penetrating and non-penetrating matters, 70% of which are controlled through corporate governance, and 10 aspects such as Party building discipline inspection, safety and environmental protection are kept under penetrating control, so that the boundaries of rights and responsibilities between the Group and its subsidiaries are clearer.

Data Review 2021

A board of directors is

established in

**458**

enterprises at all levels when necessary



**17**

important subsidiaries formulated and implemented the plan of functions and powers of the board of directors

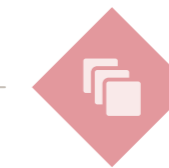


Factory area of Shandong Zhongyan

## Deepening the Institutional Reform

### Promoting the Reform of the Three Systems in An All-Round Way

The contractual management of the tenure system of managers was completed at all levels with the withdrawal ratio of managers reaching 2.2% and the market-oriented withdrawal ratio of employees exceeding 2.8%. Seventeen newly added enterprises implemented medium and long-term incentive plans involving more than 2,300 key employees.



### Exploring Differentiated Management and Control of Mixed Ownership Enterprises

We strengthened the functions of the board of directors of relative holding enterprises. The Board of Directors made decisions according to the articles of association on such matters as the difference selection of managers and the planned main business investment. We gave full play to the role of non-public shareholders of absolute holding enterprises and selected 6 enterprises to carry out pilot projects.

### Continuously Deepening the Pilot Projects of Double-Hundred Sci-Tech Reform

In the 2021 special assessment of "Double-Hundred Enterprises" and "Demonstration Enterprises in Sci-Tech Reform" for central enterprises, Hefei Cement Research & Design Institute and Sinoma International were awarded benchmarks, and Triumph Science & Technology and North Glass were awarded excellent; Sinoma International piloted the employment of all professional managers in management team in its subsidiaries; North Glass implemented equity incentive in the mode of "equity incentive + equity sale"; after being added as "Double-Hundred Enterprises", Saima IOT became the first to carrying out follow-up investment in projects.



CNBM held a training meeting on the publicity and implementation of the three-year action plan for SOE reform



# Guidance by Party Building

In 2021, CNBM Party Committee adhered to the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, thoroughly implemented the spirit of the 19th CPC National Congress and all previous plenary sessions of the 19th CPC National Congress and earnestly implemented the special action of the Party Building Innovation and Development Year of Central Enterprises. Focusing on celebrating the 100th anniversary of the founding of the Communist Party of China and the 5th anniversary of the National

Party Building Conference of State-Owned Enterprises, we carried out in-depth study and education of Party history, took the "1345" Party building work system as the starting point, and promoted the "four combinations" of Party leadership and corporate governance, Party building work and production and operation, Party building culture and corporate culture, inner-Party supervision and honest employment, so as to provide a strong guarantee for the high-quality development of the Group.

**Upholding the Party's leadership and strengthening Party building as the root and soul of enterprise development**

**Creating a unique working mechanism of Party building in "3433" mixed ownership enterprises**

**2,044**  
Party branches

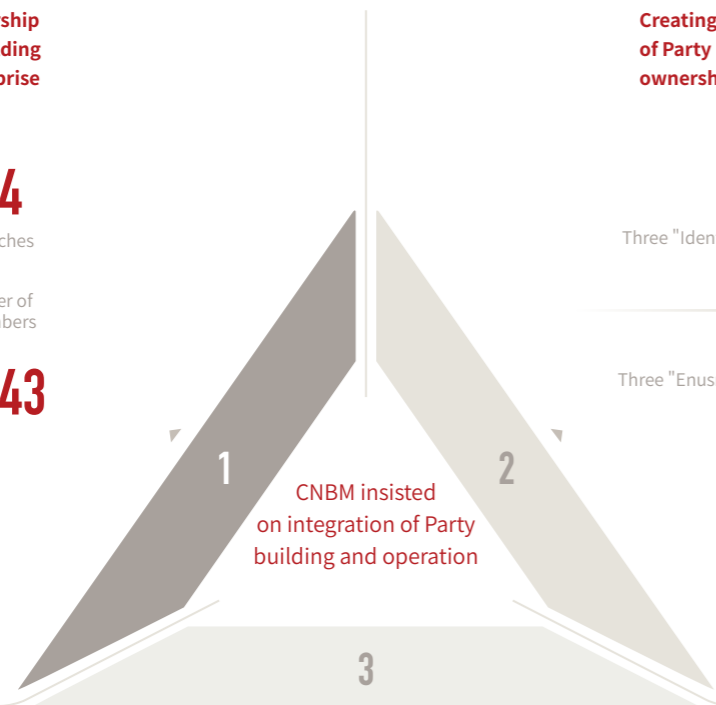
Three "Identity"      Four "Combining"

The number of Party members reached

Three "Ensuring"      Three teams

**223**  
Party committees was established

**113**  
general Party branches



**Establishing and perfecting "1345" Party building work system**

One "Insisting"      Three "Reinforcing"  
Four "Combining"      Five Projects

| Practicing "Two Maintenances"  | Strengthening Ideological Construction  | Promoting the Level of Party Building  | Building a Strong Talent Team   | Deepening Integrity and Strict Discipline   |
|--|---|--|---|---|
| The Party Committee of the Group studied 67 first issues, the first special topic of the central group was discussed 10 times, and 8 training sessions for Party members and leading cadres and Party organization secretaries were held; 51 achievements of the first political research project were selected. Learning, popularization and implementation of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era were continuously promoted. | We carried out the study and education of Party history according to high standards, explored the stories behind "Red Tokens", and held three events commemorating the centenary of the founding of the CPC (100 jogging stations, 100 cases of doing practical things, and 100 best CNBM people), so as to practically learn from history to be reasonable, increase trust, respect morality and practice. | We implemented the spirit of the National Conference on Party Building in State-Owned Enterprises, carried out activities of "looking back" in depth, and consolidated, deepened, innovated and expanded the grassroots Party building. In 2021, the Group was awarded "Grade A of 2020 Responsibility System Assessment for Party Building in Central Enterprises". | We formulated the "14th Five-Year Plan" for human resource management, explored the establishment of a closed-loop management system for human resources, increased the market-oriented selection and employment and the introduction of high-level talents, strengthened the team construction of cadres and talents, and improved the construction of training systems. | Focusing on "two maintenances", we strengthened political supervision, paid close attention to the daily supervision of "top leaders" and leading bodies at all levels, and solidly promoted the supervision of key areas and key links such as selection and employment. We strictly enforced disciplines, strengthened accountability, and put strict standards and measures throughout the whole process and all aspects of governing the Party. |

The "Jogging Event Commemorating the Centenary of the Founding of the CPC towards a New Journey" was launched. It started in Shanghai on March 20, 2021 and ended in Beijing on June 27, 2021, participated by 14,000 Party members and employees in more than 300 enterprises in more than 30 provinces and cities across China.







02

# Creating a Better Future with Science and Technology

With "the Top Priorities of the Country" in mind and driven by sustainable innovation, CNBM has been committed to building excellent materials for the country and its people. Focusing on enhancing capacity for independent innovation, speeding up breakthroughs in core & key technologies and stimulating the impetus and vitality of technological innovation, it has formulated and implemented a series of technological innovation management systems, improved the innovation platform system, given full play to the strategic supporting role of human resources management in the Group's high-quality development, strengthened positive incentives for innovation, and fully motivated the innovation vitality of enterprises. In 2021, we continued to serve the technological frontier in the world, the main battlefield of national economy, the major needs of the country and lives and health of its people, achieved a large number of major innovation achievements, and further dedicated ourselves to promoting the construction of a new development pattern.

|   |  |  |
|---|--|--|
| <p>Expenditure on research and experimental development</p> <p>▪ RMB <b>14.72</b> billion</p> | <p>Revenue from sci-tech innovation</p> <p>▪ RMB <b>3.47</b> billion</p> | <p>Holding a total of</p> <p>▪ <b>17,600</b> patents</p> |
|   |  | <p>Including</p> <p>▪ <b>4,577</b> invention patents</p> |

China Jushi Building



# Innovation Management

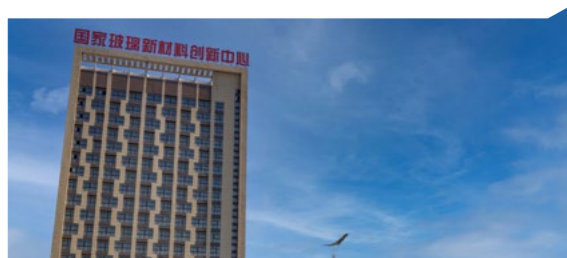
## System Innovation

CNBM has vigorously implemented the innovation-driven development strategy at all levels, made every effort to improve and promote the construction of innovation-based enterprises, taken the construction of technological innovation platform as an important starting point of technological work, given full play

to the functions of technological innovation platforms in integrating resources for innovation, cultivating innovative subjects and enhancing service capabilities, established a unique technological innovation system, and led the innovation-driven development in the field of materials.

### ❖ National Innovation Center for Advanced Glass Materials

Triumph Science & Technology strived to build the National Innovation Center for Advanced Glass Materials. With Anhui Provincial Innovation Center for Advanced Silicon-based Materials as the basis, Bengbu Glass Industry Design & Research Institute cooperated with Triumph Science & Technology Group, Bengbu Investment Group Co., Ltd and Wuhan University of Technology to take the lead in establishing the Innovation Center for Advanced Glass Materials, and introduced shareholder units including HKC Corporation Limited, Shanghai Institute of Optics and Fine Mechanics ("SIOM"), China Building Material Test & Certification Group Co., Ltd. ("CTC Group"), Jiangsu Tiemao Glass Co., Ltd. ("Jiangsu Tiemao"), Zhejiang University and Shahe Glass Technology Research Institute. After four years, it was approved by the Ministry of Industry and Information Technology and became the first batch of innovation centers of national manufacturing industry during the 14th Five-Year Plan period.



### ❖ Innovation and R&D around the Globe

China Building Materials Academy (CBMA) signed a strategic cooperation agreement with Saudi Arabian Oil Company (Saudi Aramco) to jointly set up an innovation center to carry out innovation cooperation on nonmetals related to the oil industry chain in the fields of technological R&D, standard establishment and certification, publicity and training of best practical experience, etc.; set up a "Joint R&D Center" with Saint-Gobain to carry out regular academic exchanges, joint R&D, joint creation of Internet communication platforms and other activities in the fields of glass, ceramics, cement mortar, etc.

### ❖ "Entrepreneurship and Innovation" Bases in Various Fields

China National Building Material Co., Ltd. actively promotes the construction of "entrepreneurship and innovation" bases in four fields: intraocular crystals, composite materials, smart big data services and intelligent manufacturing of high-end equipment. At present, the "entrepreneurship and innovation" base of intraocular lens affiliated to Sinoma Advanced Materials Co., Ltd. has attracted 18 enterprises, relocated 5 projects, set up 2 platforms transformed 5 technological achievements. In 2021, China National Building Material Co., Ltd. added 6 provincial and ministerial R&D institutions.

### ❖ National Industrial Design Center and National Technological Innovation Demonstration Enterprise

Bengbu Glass Industry Design & Research Institute was successfully approved into the fifth batch of "National Industrial Design Centers" by the Ministry of Industry and Information Technology by virtue of its industrial design capability, technological innovation capacity, achievement transformation ability, integration ability of production and research and industry influence for many years, and its innovation ability was highly recognized at the national level. In the same year, Bengbu Glass Industry Design & Research Institute and China Triumph International Engineering Company limited (CTIEC) were recognized as "National Technological Innovation Demonstration Enterprises" by the Ministry of Industry and Information Technology.

### ❖ Reorganization of National Key Laboratories

The reorganization and integration schemes of the National Key Laboratory of New Technology of Float Glass, the National Key Laboratory of Green Building Materials and the National Key Laboratory of Special Fiber Composite Materials were completed. Among them, the National Key Laboratory of New Technology of Float Glass has started the Phase II construction of the key laboratory and will build it into a world-class achievement transformation base and intelligence concentration highland in the field of new glass materials.

## Institutional Innovation

As an experimental state-owned investment corporation, by focusing on enhancing capacity for independent innovation, speeding up breakthroughs in key & core technologies and stimulating the impetus and vitality of technological innovation, the Group formulated and issued the Guiding Opinions of CNBM on Medium- and Long-term Incentives and Constraints (Trial) to encourage enterprises to begin piloting, conduct bold exploration, and comprehensive use of equity incentives (including equity incentives of listed companies and technology-based enterprises), employee stock ownership of mixed ownership enterprises, dividend incentives (including post dividends and project profit dividends of technology-based enterprises), excess profit sharing, project follow-up investment, virtual equity and other incentives to mobilize employees' innovation and vitality. In 2021, the Group implemented the open competition mechanism for sources of original technologies and breakthroughs in key & core technologies, and 17 enterprises were included in 25 lists.



▼ Researcher working in the laboratory of China Building Materials Academy (CBMA)

### Innovation Incentive System of CNBM

- **Implementation Plan of CNBM for the "Open Competition Mechanism"**  
Encourage successful enterprises to provide competitive market-oriented salaries for leading talents and core backbones in the field of technology.
- **Measures of CNBM for the Administration of Scientific Research Projects**  
Implement hierarchical management and decentralization, and improve the closed-loop system of scientific research project management.
- **Guiding Opinions of CNBM on External Transformation of Technological Achievements (Trial)**  
The technological achievements independently developed by the Group were divided into three categories: A, B and C, and more than 70% of earnings from achievement transformation were distributed to scientific research and transformation teams.
- **Plan of CNBM for Human Resources Management during the 14<sup>th</sup> Five-Year Plan Period**  
Improve the career development and post system and training system, and establish an incentive and constraint mechanism with salary as the core.

## Talent Team

We constantly strengthen the team of technological talents, and innovate in the environment for talent development. Relying on platforms such as national key laboratories, postdoctoral research centers and academician workstations, we actively

carry out the team construction and talent training for technological innovation, speed up the training and introduction of leading R&D team leaders in the field of technology, create a new engine, and form the new driving force for technology.

### Data Review 2021

High-tech researchers and engineering technicians

38,000



National Enterprise Technology Center

17



National Research and Design Institutes

26



Academicians

3



# Collaboration on Innovation

## Industrial Chain Integration

We actively promote the deep integration of innovation chain with industrial chain, further promote the coordination of production and research within the Group, organize affiliated institutes, enterprises and relevant universities to unite, make every effort to open up the upstream and downstream industrial chains, and make concerted efforts to promote the industrial coordinated development.

Data Review 2021

Committees for Standardization

19



Formulated and amended

130

international, national and industrial standards



China Building Materials and Cement Cloud Industry Big Data Platform selected into Typical Cases of "Industrial Internet Integration Innovation Application - Industry Promotion Action"



**Internal Industry-Research Coordination**

- The Group released the list of the first batch of technological achievements for external transformation. Nine Class C achievements of China Building Materials Academy (CBMA) and Sinoma Advanced Materials Co., Ltd. were transformed externally, and more than 70% of earnings were distributed to scientific research and transformation teams. It cooperated with China Building Materials Academy (CBMA), China Building Material Test & Certification Group Co., Ltd. (CTC Group) and other internal units in the application research of functional materials and products related to indoor purification via phase change, green degree evaluation of functional decorative materials, establishment of pollutant emission identification system of indoor materials and articles and project demonstration.



**External Joint Research**

- Aiming at the major strategic needs of homemade large aircrafts, the Group carried out joint R&D on T800 grade carbon fiber and prepreg localization, primary and secondary load-bearing structural parts, aeronautical transparent parts, turbofan blades, casing and other key components of aero-engine with Commercial Aircraft Corporation of China, Ltd. (COMAC) and Aero Engine Corporation of China (AECC), and obtained the supplier qualification of three composite fuselage sections: middle-rear fuselage, rear-front fuselage and rear-rear fuselage of wide-body passenger aircraft. Beijing New Building Materials Public Limited Company (BNBM) of the Group established a partnership with 11 colleges and universities including Wuhan University of Technology, University of Science and Technology Beijing, China University of Geosciences, Beijing (CUGB), Qingdao University of Science and Technology, Suzhou University to carry out technological research on study of the curing mechanism of chloride ions in desulfurized gypsum, study of improvement of nail-holding power of plasterboards, study of wall decorative plates with antibacterial purification and phase change function, development of new high-performance phase-change energy-storing composite building materials and products, performance optimization of waterproof materials, etc. through industry-research cooperation.

**CNBM Technology Corporation Limited: China Building Materials and Cement Cloud Industry Big Data Platform**

In November 2021, the "China Building Materials and Cement Cloud Industry Big Data Platform" declared by CNBM Technology Corporation Limited was selected into the pilot demonstration projects of Big Data industry development in 2021 of the Ministry of Industry and Information Technology. This platform, designed for the cement industry, is a one-stop data governance platform with intelligent data management to realize intelligent, green and high-end data life cycle management of the cement industry from the Group, regional companies and enterprises. It's intended to help cement groups, regional companies and enterprises quickly build end-to-end intelligent data systems from data access to data analysis, eliminate data islands, unify data standards and achieve the digital transformation of cement enterprises.

At the Third "2021 Global Industrial Internet Conference", China Building Materials and Cement Cloud Industry Big Data Platform was selected into the typical case of "Industrial Internet Integration Innovation Application - Industry Promotion Action", which was highly recognized by industry associations and research institutions.

## Business Mode Innovation

We further promoted business mode innovation, accelerated the development of the innovation mode of "R&D center + industrial base", vigorously developed intelligent logistics and "cement+" business, realized the continuous improvement of business modes, and highlighted the strong business value of creating a win-win situation.

Data Review 2021

cement kiln co-disposal production lines that have been put into production and are under construction

50



Annual disposal scale

4.93

million tons



Production Workshop for Co-disposal of Domestic Waste in Cement Kilns of Sinoma Anhui

### "R&D Center + Industrial Base" Mode

China Building Materials Academy (CBMA) actively promoted the construction of "3 + N" new materials innovation industry platforms; 18 enterprises have settled in the "entrepreneurship and innovation" base of Beijing Sinoma Intraocular Crystal Research Institute Co., Ltd.

### Intelligent Logistics Business

The network logistics business of "Vehicle Calling" app has grown rapidly, with 430,000 new registered heavy trucks on the platform, totaling more than 800,000 vehicles; there were 280,000 new registered users; the total amount of commodity transactions was RMB 17 billion, a year-on-year increase of 529%; the online business volume was 250 million tons, a year-on-year increase of 206%. China National Building Materials & Equipment Import & Export Corporation built a supply chain service platform called "Yangcatitong" and explored digital engineering distribution services.

### "Cement +" Business

The sales of aggregates of South Cement, China United Cement Corporation (CUCC), Qilianshan and Sinoma Mining Construction Co., Ltd have increased significantly year-on-year, driving the income of aggregate and ready-mixed concrete business to nearly RMB 60 billion. Efforts were intensified to replace industrial waste such as slag, steel slag and fly ash, with an annual comprehensive utilization capacity of 130 million tons.



# Achievements of Technological Innovation

We actively serve and support the implementation of the national technology strategy, undertake a number of major national technology projects, and continue to lead the healthy and sustainable development of China's inorganic nonmetallic material industry. In 2021, the Group made achievements and progress in the major national technological tasks, and six achievements were listed in the Catalogue of Recommended Achievements of Technological Innovation of Central Enterprises; two achievements participated and completed by Sinoma Science & Technology, Nanjing Fiberglass R&D Institute Limited and CNBM Environmental Protection Research Institute (Jiangsu) Co., Ltd. (CNBMEP) were awarded the first prize of national scientific and technological progress and the second prize of technological invention respectively; great breakthroughs were made in bottlenecks of core technologies. A large number of advanced materials, such as low-heat cement, advanced composite materials and neutral borosilicate pharmaceutical glass tubes, were used in national major project construction, the Blue Sky Protection Campaign and pandemic prevention and control.



## CNBM: Many major technological achievements displayed in the National Science and Technology Innovation Achievement Exhibition during the "13<sup>th</sup> Five-Year Plan" Period

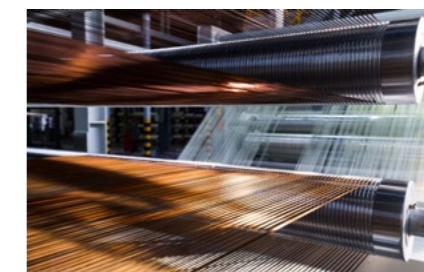
On October 26, 2021, General Secretary Xi Jinping visited the National Science and Technology Achievement Exhibition during the 13<sup>th</sup> Five-Year Plan Period and Lunar Exploration Program Achievement Exhibition at which the Group's advanced materials and products were displayed. At the exhibition themed "Innovation Drives Development - Moving Towards A Powerful Country in Science and Technology", major technological achievements of CNBM, such as the first float 8.5-generation TFT-LCD glass substrate, cadmium telluride power generation glass, thruster ducts as the core component of submarines and China's space station, C919 homemade large aircraft, quantum computer named "Jiuzhang", all-sea deep manned submersible named "Fendouzhe", etc., were presented and highly affirmed by senior leaders of the Party and the state. As a central enterprise of building materials, we shoulder the responsibility as the national team of materials, and will continue to fulfill the corporate mission of "creating a better world with materials" and contribute to serving the national construction.

National Science and Technology Achievement Exhibition during the "13<sup>th</sup> Five-Year Plan" Period



## Major Achievements of Technological Innovation of CNBM in 2021

- The Xining 10,000-ton carbon fiber base was put into production, realizing the design of a single-line high-performance carbon fiber production line with an annual output of 3,000 tons and the independent and controllable high-end complete sets of technologies for the first time, with completely proprietary intellectual property rights.
- Low-heat cement enabled Baihetan Hydropower Station, the pillar of the country, was put into operation for power generation, and the special cement for Sichuan-Tibet line project passed the trial verification.
- After tackling key problems in glass solidification of high-level nuclear radioactive waste liquid, the first glass solidification facility of high-level radioactive waste liquid in China was officially completed and put into operation, marking a breakthrough in treatment capacity of high-level radioactive waste liquid in China.
- A large number of advanced materials and technological services supported major national projects such as Tianwen-1, Space Station and Shenzhou spaceship.
- Neutral borosilicate glass for pharmaceutical use is in stable mass production, and penicillin bottles and prefilled syringes for vaccines are being fully developed.
- Breaking foreign monopolies, 0.03 mm flexible glass can be bent for 900,000 times continuously.

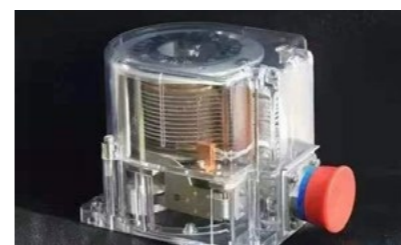


Production line of neutral borosilicate pharmaceutical glass tubes in Triumph Science & Technology

High-performance carbon fiber



China Building Materials Academy (CBMA) enabled the first glass solidification facility of high-level radioactive waste liquid in China to be officially put into operation



The 362C time controller developed and produced by Horology Research Institute under China Building Materials Academy (CBMA) is applied to the return capsule of Shenzhou-13 manned spaceship



Flexible foldable glass of Triumph Science & Technology





### 03

## Living in Harmony with Nature

As the only central enterprise in the building materials industry and the largest cement enterprise in the world, CNBM actively practices the idea that lucid waters and lush mountains are invaluable assets, deeply integrates development into values and the whole process of production, operation and management, unwaveringly takes the path of ecological priority and green and low-carbon development, actively carries out green production and green services relying on its own business advantages and scientific research strength, devotes itself into the environmental protection industry, and takes blue sky protection as the primary responsibility, so as to make contributions to promoting the high-quality development during the 14<sup>th</sup> Five-Year Plan period and creating a "beautiful China".

Investment in energy conservation and environmental protection

■ RMB **5.106** billion



The number of national green factories has increased to

■ **90**



The number of national green mines has increased to

■ **48**



Green factory of South Advanced Material



## Green Management

We have continued to consolidate the foundation of environmental protection management, formulated a responsibility system with wide coverage, gradually formed a working pattern of hierarchical supervision, established and improved the closed-loop management of ecological and environmental protection, and took multiple measures to implement the green development concept.

We have continuously strengthened the evaluation and accountability mechanism, kept the supervision, inspection and rectification efforts unrelenting, vigorously and orderly promoted the rectification of the central inspection on ecological and environmental protection, and disclosed the rectification plan of the central inspection on ecological and environmental protection to the public. By the end of 2021, a total of 163 rectification measures for environmental protection had been completed, accounting for 90.5%, and the completion rate of the chronological progress was 100%; process supervision, exposure for accountability, and special actions were orderly. The number of administrative penalties related to environmental protection decreased by 76% year on year, and the number of penalties decreased by 71% year on year.

### Aksu Tianshan Company: Protecting beautiful homeland with green factories

Aksu Tianshan Company has steadily promoted industrial green development, implemented green manufacturing demonstration projects, continuously intensified energy conservation and emission reduction, solidly taken a series of measures for energy conservation and emission reduction, and constantly improved environmental soft power. The Company has won many honorary titles such as "National Cleaner Production Demonstration Enterprise in Key Industries", "Energy Efficiency Pacesetter in High Energy Consumption Industries", "Green Building Materials Products", "Advanced Quality Management Enterprise" and "Green Factory" in the autonomous region.

Aksu Tianshan Company



### CNBM: Strengthening warning education and implementing accountability

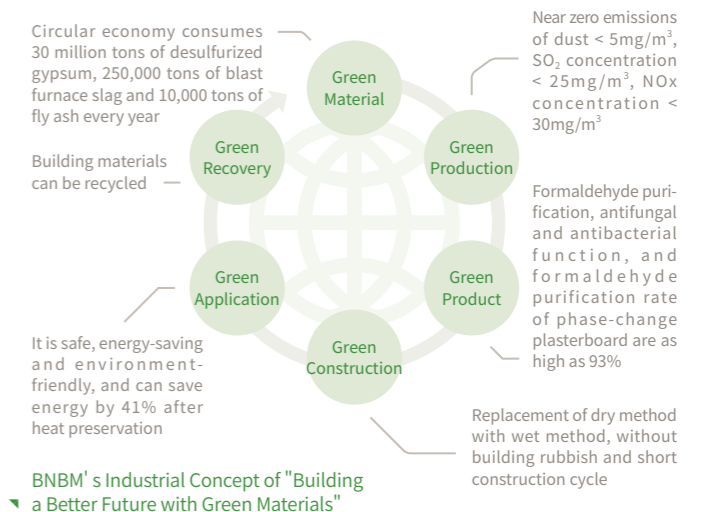
CNBM has resolutely shouldered the political responsibility of ecological environment protection, and placed supervision and rectification in a prominent position. Environmental warning cases are disclosed quarterly on the Group's management and supervision platform. Since the approval of the supervision and rectification report, two warning cases have been disclosed on the Group supervision and management platform, including feedback from a new batch of inspections and environmental violations of enterprises, and talks have been arranged to improve the warning function. Meanwhile, for the list of five problems and cases with clues concerning accountability handed over by the inspector team, the Implementation Plan of CNBM for Implementing the Accountability Work of Problems Handed over by Central Ecological Environmental Protection Inspection was formulated after research, the working mode of direct investigation and direct handling was adopted for the clues to problems handed over. The Group's Commission for Discipline Inspection set up an investigation team to conduct a comprehensive and in-depth investigation, and all the clues to five problems were checked.

## Green Production

Adhering to the "Three Principles of Green Manufacturing", we highlight green and environmental protection in the selection of raw materials, manufacturing process and product application, pursue energy conservation, pollution control and carbon reduction in the whole process, and strive to explore the production mode of harmonious coexistence between industry and nature, so as to provide environment-friendly materials for human society.

### BNBM: Developing the industrial concept of "Building a Better Future with Green Materials"

BNBM attaches great importance to enterprise management, takes the industrial development concept of "Building a Better Future with Green Materials", implements the strategy of "commanding heights", fully implements the "selection of the best among the two" and "benchmarking management" mode, uses information management systems to integrate business and information, and considers "technological innovation and brand building" as the strategic engine, in order to create a path of self-innovation, transformation and upgrading of China's traditional manufacturing industry.



## Selection of Green Materials

In the selection of raw materials, we advocate circular economy, continuously intensify the comprehensive utilization of solid waste resources, and increase the proportion of industrial waste residues such as slag, steel slag and fly ash to replace raw materials of natural minerals, with an annual consumption of 130 million tons of solid waste.

### Nanjing CUCC: Cement kilns for co-disposal of hazardous waste help pandemic prevention and control

In Nanjing, Jiangsu Province, CUCC Project of Cement Kiln for Co-disposal of Hazardous Waste was approved for disposal of 31 categories of hazardous wastes and had the functions of hazardous waste detection, reception, storage and disposal and emergency rescue of environmental pollution. In July 2021, COVID-19 broke out in Nanjing. Nanjing CUCC supported the government and ecological and environmental protection departments in emergency disposal of 146.86 tons of household garbage and medical waste in the quarantine area, guarded the "last pass" for pandemic prevention and control, and played a vanguard role and undertook the responsibility as a central enterprise in the face of urgent, difficult, dangerous and important tasks.

Nanjing CUCC Hazardous Waste Disposal Workshop





## Green Manufacturing

In the manufacturing process, we deeply practice the new development concept, uphold the "Three Principles of Green Manufacturing", highlight green environmental protection in the selection of raw materials, manufacturing process and product application, and pursue energy conservation, pollution control and carbon reduction in the whole process.



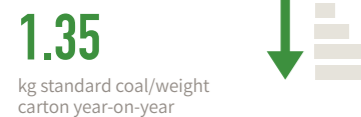
▼ Huaikan Nanfang Intelligent Cement Factory

### Data Review 2021

The comprehensive energy consumption per unit product of cement clinker decreased by



The comprehensive energy consumption per unit product of flat glass decreased by



SO<sub>2</sub> emissions decreased by



NO<sub>x</sub> emissions decreased by



## Green Product

In the product application, we promote the consumption of high-performance and high-grade cement and concrete, provide customers with high-quality, green and low-carbon cement products, guide the transformation and upgrading of glass to "electronic, photovoltaic, intelligent and energy-saving" one, and boost the application of high-end and serialized wind power blades and thin-film solar battery modules in the new energy industry.

On the premise of ensuring product quality and transportation safety, we also actively promote simplified packaging, use renewable packaging materials wherever possible, and reduce packaging waste. In 2021, the Group's low-heat cement was used in major national projects in Wudongde and Baihetan for the first time, and nuclear power cement was widely used in many nuclear power projects in Ling'ao, Daya Bay and Yangjiang.

### China Building Materials Academy (CBMA), and Jiahua Cement: Low-heat cement helps Baihetan Hydropower Station to be put into operation for power generation

China Building Materials Academy (CBMA), Jiahua Cement and China Three Gorges Corporation (the developer and builder of Baihetan Hydropower Station) jointly developed hydraulic low-heat cement concrete with high crack resistance and high durability and complete sets of application technologies. The calorific value of cement and concrete is reduced by 15%, the crack resistance is improved by more than 10%, and the crack resistance safety factor of dam concrete is over 2.0, which are far above the highest requirements of the current code. A low-temperature-rise micro-expansion high crack resistance concrete with proprietary intellectual property rights and key technologies for dam construction were formed. On July 5, 2021, Baihetan Hydropower Station was officially put into operation to generate electricity. The dam used 3 million tons of low-heat cement and was poured with 8 million cubic meters of concrete, without a "temperature crack". All technical indexes met the design high-quality requirements, which truly realized the "seamless dam".

▲ Low-heat cement helps Baihetan Hydropower Station complete the project construction with high quality



## Green Service

We are always committed to providing various types of green products and services for the market, actively exporting high-efficiency and energy-saving green products and system service solutions, and boosting the continuous optimization and upgrading of green industrial structure and service level.

## Professional Technological Service

We provide environmental monitoring & diagnosis, technical transformation, intelligent control and other energy saving and environmental protection technical services in such aspects as high-efficiency and energy-saving sintering systems, pollutant reduction technology, waste heat power generation, technical transformation, and automatic control. In 2021, the Group realized the co-construction and integration of industry chain, supply chain and value chain of engineering technology service through the integration of engineering technological sector, and created a "new business card" for engineering technology service in the world.

## Integrated Consulting Services

As the largest comprehensive third-party inspection and certification service organization in the field of building materials inspection in China, CTC Group provides consulting, evaluation and certification services in energy assessment, energy management system, CDM project, green building materials and carbon verification. In 2021, the total certification certificates for green products and green building materials products issued by CTC Group ranked first in China, and it issued the first certificates for many industries, becoming the main force in promoting green product certification in China.

## Ecological Value-Added Services

Relying on the technological progress in solid waste consumption and resource recycling, we solve the problem of industrial and urban waste reuse and digestion; actively carry out co-disposal of waste in cement kilns. In 2021, the Group had 50 cement kiln co-disposal production lines put into production and under construction, with an annual disposal scale of 4.93 million tons.

## Comprehensive Ecological Restoration Services

We develop the environmental protection service projects, undertake environmental impact assessment, inspection and acceptance of the environmental protection and pollutant discharge permit of construction projects, and expand the market for geological disaster control and ecological restoration. In 2021, CNBM Geological Engineering Exploration Academy Co., Ltd. successfully completed the disposal project of undisposed household waste in Qingshanling, Wenchang City, Hainan Province, and the comprehensive treatment project of goaf of small coal mines in open mines in Baorixile Town in the area of Hulun Buir Grassland.

### CNBM Geological Engineering Exploration Academy Co., Ltd.: Ecological restoration revivifies the green color of grassland

With the application of geological disaster prevention and control technology in goaf of small coal mine in large open mines, CNBM Geological Engineering Exploration Academy Co., Ltd. successfully completed the "comprehensive treatment project of goaf of small coal mines in open mines in Baorixile Town in the area of Hulun Buir Grassland", with over 3,000 mu of treatment area, 245 treated goafs of small coal mines, and 147,000 m<sup>3</sup> of filled green and environment-friendly materials. It not only ensures the safe production of open mines in Baorixile, but also helps extract more than 20 million tons of covered coal, eliminate the hidden dangers of ground collapse and secondary disasters in the treatment area, and basically restore vegetation. It guarantees the safety of herders and livestock, promotes the coordinated development of local industry, agriculture and animal husbandry, and creates remarkable economic and ecological environmental benefits for the local area.

▲ Comparison chart of small coal mine of open mine in Baorixile before and after treatment





## Services for the Winter Olympics

The much-anticipated Beijing 2022 Winter Olympics came to a successful conclusion. In addition to providing infrastructure materials such as cement, concrete, and sand-gravel aggregate for the Winter Olympics, all enterprises of China National Building Materials Group Co., Ltd. (CNBM) also made contributions to the successful hosting of a wonderful, extraordinary, outstanding and green Olympic Games as a central enterprise of building materials.



**BNBM** used "Dragon Brand" plasterboards, light steel-frame structures, mineral wool boards, rock wools, inorganic environment-friendly coatings and other new building materials to undertake the infrastructure construction of 15 Olympic venues and 2 supplementary service items in the three divisions of Congli, Yanqing and Beijing, and provided about 3 million square meters of plasterboards, 4,000 tons of light steel-frame structures, 100,000 square meters of mineral wool boards, 1,200 tons of rock wools, and nearly 100 tons of inorganic environment-friendly coatings.



National Speed Skating Oval (also called "Ice Ribbon") uses 80,000 square meters of BNBM plasterboards and 70 tons of "Dragon Brand" light steel-frame structures

Beijing Zoo Store, the retail store of official licensed products of Beijing 2022 Winter Olympics designed and built by **BNBM House**, has been put into operation and formally opened in 2019. It is also the first retail store of official licensed products of Beijing 2022 Winter Olympics in the park system, which has attracted wide attention. The retail store of official licensed products is an important window for the Winter Olympics to promote its brand image and spread ideas. The appearance, interior decoration, material selection and building performance of the retail store were highly valued.



Prefabricated building of a licensed retail store for the Winter Olympics

CNBM Photoelectric Material under **Triumph Science & Technology** used advanced cadmium telluride power generation glass to build the Olympic Corridor - Zhangjiakou Chicheng County Large Mountain Power Station Restoration Project, the Green Winter Olympics Demonstration Project-Zhangjiakou Dida Expo Plaza Reconstruction Project, and the Image Decoration Project of Power Generation Glass in Winter Olympics Division. Five sets of cadmium telluride power generation glass with the theme of Winter Olympics were installed in the core area of Winter Olympic Village and the area of National Ski Jumping Center to illuminate the fields of Winter Olympic Games with green electric energy.



Optoelectronic materials of Triumph Science & Technology light up many landmarks of the Winter Olympics

**BNBM Group Forest Products Co., Ltd.** provides green and high-quality boards, Karrison flames-retardant plywood, for the Beijing Winter Olympics, to support the construction of Winter Olympic venues and mountain news centers in Yanqing Division. This material is adopted with a new generation of dry flame retardant technology with "higher formaldehyde emission standard" and has excellent environmental protection performance. The flame retardant performance of the board has fully reached the national B1 grade flame retardant material standard, the 3A standard has been implemented, boards are checked one by one, and the indoor space safety of the Winter Olympic venues are strictly guarded.



High-quality boards of BNBM Group Forest Products Co., Ltd. ensure the indoor safety of Winter Olympic venues

The Institute of Cement Science and New Building Materials under **China Building Materials Academy (CBMA)** provides consulting services for indoor environmental pollution control in the Olympic Village and Olympic venues of the Winter Olympics, and successfully repairs more than 20 deformed joints with serious leakage and over 70 elevator shafts; ZY concrete expansive agent independently developed and produced by CNBM Zhongyan Technology Co., Ltd. can overcome the structural leakage (structurally self-waterproofing), realize seamless construction of super-length reinforced concrete structure, and successfully be applied to the infrastructure construction of National Speed Skating Oval.



China Building Materials Academy (CBMA) ensures safety for Winter Olympics with environmental governance technology

**Sinoma Science & Technology** provides Beijing Yanqing and Zhangjiakou competition areas with services of hydrogen fuel-cell vehicles with hydrogen storage cylinders, in which the first batch of 46 hydrogen commuter buses to Yanqing, Beijing all use 165L hydrogen storage cylinders produced by Sinoma Science & Technology, with a designed endurance mileage of 630 kilometers. The Company's products are also applied in batches in insulated logistics vans, and police cruisers, fire cruisers and mail cars with hydrogen cells inside and outside the competition areas.



New energy vehicles of Sinoma Science & Technology run smoothly inside and outside Winter Olympics venues

**CNBM Geological Engineering Exploration Academy Co., Ltd.** undertakes the real estate surveying project of National Speed Skating Oval, adopts vehicle-mounted laser radar technology for field data acquisition, successfully replaces the traditional ground operation mode involving groups of people, reduces the contact and exposure time of data collectors in the external environment, and provides high-precision and informative 3D point cloud and vector model data, which has laid a foundation for the high-quality and timely completion of the real estate surveying project of National Speed Skating Oval of the Winter Olympics.



CNBM Geological Engineering Exploration Academy Co., Ltd. supports the construction of Winter Olympic venues with advanced surveying and mapping technology



# Services for Construction to Enable a Better Life

Part

II

Reponse to the Sustainable Development Goals (SDGs) of the United Nations



Panorama of the South Logistics in Huzhou Province



04



Growing Together with Employees

p. 50

05



Marching Towards a Better Society

p. 62

06



Assuming the Long-Term Responsibility

p. 70





04



## Growing Together with Employees

Adhering to the concept of "people first, life first", CNBM has always put people first and taken initiative to build an intrinsically safe enterprise. Meanwhile, CNBM has also strived to protect the rights of employees and respected their personality, making the enterprise a safe and reliable partner as well as a happy and comfortable home for them. We have created a sustainable and bright future with all employees, and conveyed the inner happiness to the society.

Total number of employees

■ 207,000



Occupational health and safety input

■ RMB 1.62 billion



Employee turnover rate

■ 9.5%



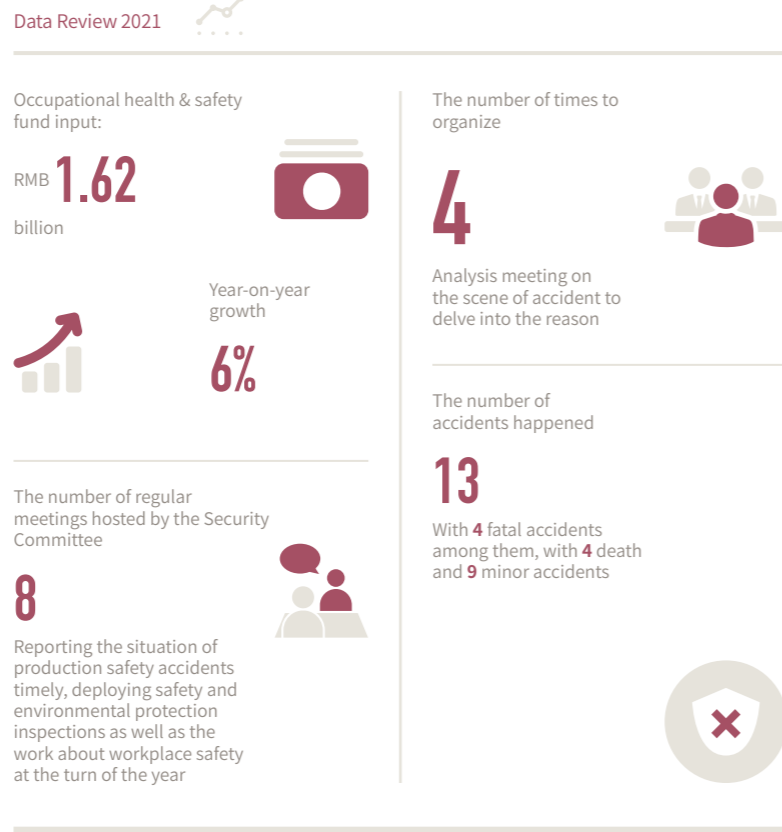
The Great Wall tour hosted by Hongda Company to celebrate the National Day



# Safety and Prudence

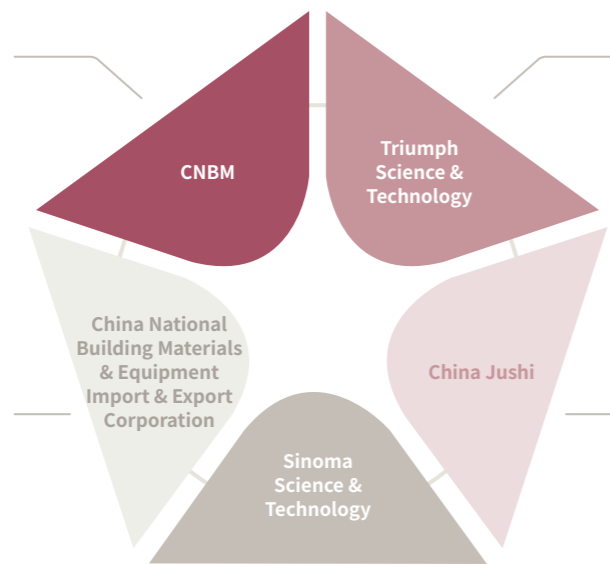
## Improvement of Safety System

Security is the foundation of enterprise development. Firmly sticking to the development concept of "life first, safety first", we have improved the safety management system continuously. With the enactment of the regular meeting system by the Security Committee in Group, we explored the implementation of safety checklist management for member enterprises, guided the screening of hidden risks, perfected the conversation mechanism for production safety accidents, and carried out the notified of accidents and told a featured story to prevent similar incidents from reoccurring. These actions laid a solid foundation for the high-quality development in Group, and also glorified the great atmosphere for the 100th anniversary of the founding of the Party.



■ To actively cooperate with the Ministry of Emergency Management, the China Association of Work Safety and other higher-level units, the revision of important laws and regulations, such as the Mine Safety Law, the 14<sup>th</sup> Five-Year Plan for Mine Work Safety, and the Criteria for Determining Hidden Risks of Major Work Safety Accidents in the Industrial and Trade Sectors, was organized.

■ The overseas security management was improved constantly with the formulation of the Guidelines on Preventing Overseas Safety Risks and the Manual on Warning of Safety Risks for Overseas Employees.



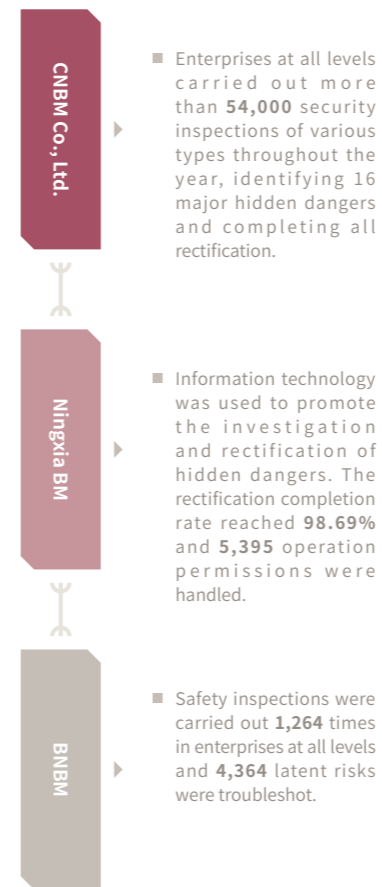
■ EHS management system certification was established and implemented in its 21 manufacturing enterprises, with the certification rate reaching **95.5%**.

■ The establishment of enterprise safety management organizations was actively promoted, and the allocation rate of safety function departments in manufacturing and construction enterprises reached **100%**.

■ The Letters of Responsibility on the Management of Work Safety Targets in 31 factory and departmental-level units was compiled, with a total of **11,038** agreements of responsibility on safety signed.

## Troubleshooting of Hidden Risks

In 2021, the headquarters of Group further strengthened the security supervision and inspection work, penetrating to the grassroots enterprises. 7 of them with prominent potential risks accepted conversation and supervision on the rectification of the problems. At the same time, member enterprises were organized to carry out special inspections for flood season, non-coal mines, underground mines, hazardous chemicals, at the turn of the year and so on.



▼ Chen Xiaobao, chief of aggregate and electric section of Sinoma Anhui Cement Co., LTD., was performing outdoor inspection and maintenance on the aggregate and electrical equipment, recording the inspection and maintenance outcome and eliminating potential risks timely to ensure the safe and stable operation of the electrical equipment.



## Special Rectification on Safety

We have attached great importance to the three-year rectification plan on work safety. In 2021, a critical stage, precise measures were taken simultaneously to create a good environment for work safety, focusing on major hazard sources for dangerous chemicals, standardization of work safety, underground mines and other work.



Special inspection on forklifts was conducted in BNBM.

- **CNBM Co.,Ltd.** performed a comprehensive inspection on compliance information including the qualification certification, record, and current situation evaluation of its 10 major hazard sources for dangerous chemicals.
- **Antai Company of Sinoma Science & Technology** formulated the Special Inspection and Rectification Plan on Gas Safety, set up a leading group in the corporate level, and determined the responsibility of the corresponding departments and persons.
- **Zhongfu Shenyang** actively promoted the "five-sphere integrated" information platform to further enhance the level of automatic control, with a **100%** usage rate of automatic control system.



- **Geological Exploration Center** carried out the special troubleshooting on its three underground mine outsourcing projects, initiating explosive device, blasting operation, key equipment and facilities, with **262** generally latent risks screened and rectified in total.
- **Kaolin Clay Co., Ltd.** enacted corrective actions term by term for prominent problems discovered about the workplace environment, electricity safety and archives management of work safety.

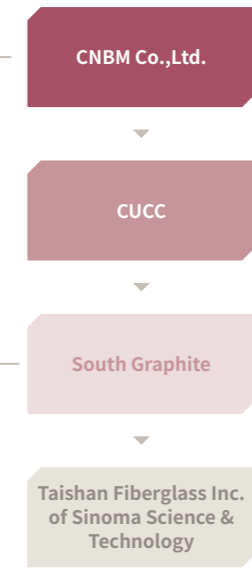
- In 2021, **14** new enterprises satisfied the standards, with an overall compliance rate of **98.6%**.
- Five enterprises, including **China United Cement Tai'an** and **Hangzhou Shanya South**, passed the first-grade evaluation of work safety standardization by the Ministry of Emergency Management.

- **Sinoma Science & Technology** actively promoted the construction of double precaution system for security risks in its affiliations, with **12,046** risks of various types and **36** major risks identified.
- **Sinoma International** compiled the Sinoma Guidelines for the Construction and Implementation of the Double Precaution System for Multi-level Security Risks Control and Potential Troubleshooting as well as the Classification of Hidden Dangers in the Operation Area of Cement Clinker Production Line.

## Safety Enhancement with Science and Technology

"Enhancing safety with science and technology" is a fundamental policy for enterprises to improve the management level of work safety. In 2021, implementing the strategy of "enhancing safety with science and technology" positively, we constantly increased the input in work safety and harvested help from science and technology. Based on advanced scientific and technological means, we further perfected the management level and worked together to ensure intrinsic safety.

- The expected annual expenditure on work safety reached **RMB 1.41 billion** in 2021, an increase of **10%** over final account in the previous year.
- We carried out the hydraulic support technology for mining surface and the transient electromagnetic method in mines for advanced geophysical prospecting, providing technical basis for water prevention and control in mines.



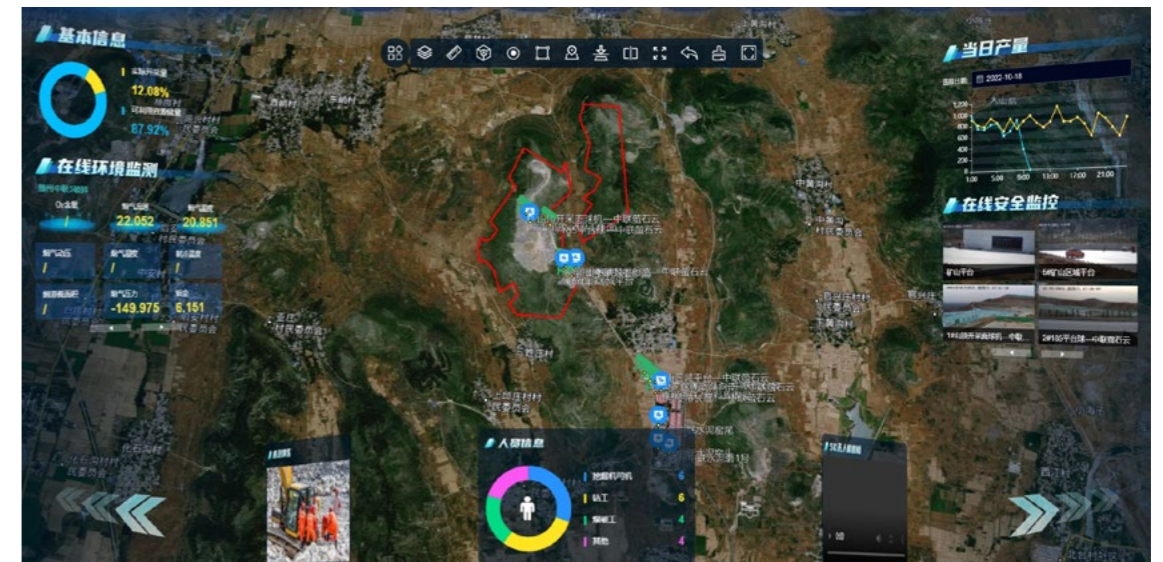
- With the help of digital mine construction, the development of video monitoring management system and mine slope stability monitoring system was promoted simultaneously.

- As a protection device, the interlocking valve was added to the gas burner to ensure the intrinsic safety of the equipment.

### China United Cement Tengzhou Co., Ltd.: intelligent management with 5G to boost green mine

Always adhering to the construction principle of "high starting point and high standard", China United Cement Tengzhou Co., Ltd. took "building domestic first-class mine" as the construction goal and developed a set of 5G intelligent mine management system with independent intellectual property rights. This system integrates all the management elements of existing mines into one for centralized control and viewing, with each production link displayed in live 3D scene in real time. Combined with the sensor equipment from the Internet of Things, UAV inspection equipment and the existing video surveillance system, the system truly realized the all-factor intelligent mine management with the integration of airspace and territory, which improved management efficiency, reduced work risks and management costs, and completely changed the extensive state of mine management.

The 5G cloud platform of intelligent mine management by China United Cement Tengzhou Co., Ltd.





## Promotion of Safety Culture

Strengthening training and warning education is the most important part for better work safety. We actively organized activities such as Work Safety Month, Publicity Week of Law on Prevention and Control of Occupational Diseases, Competition of Emergency Solutions and Law Publicity, constantly intensifying the publicity and education of security and deeply raising the safety awareness of all staff, so that they could truly keep safety in mind.

Data Review 2021 

The person-time of accepting raining of work safety and occupational health

**2.139**  
million



"Micro film" activities about work safety were launched positively, with scripts and synopsis by member enterprises reached

**22**



Member enterprises were organized to attend the National Safety Knowledge Online Competition during the Work Safety Month, with

**40,000**  
participants or so



Further education and registration work were conducted for certified safety engineers to fully utilize the mode of Internet plus security training, with

**320**  
persons



We gained a score of **3.9** million, and ranked **17<sup>th</sup>** among central enterprises.

who accepted online further education training for certified safety engineers.



The oath site of Kalaqin Cement Company during the Safety Month

## Employees' Rights and Benefits

### Protection of Basic Rights and Benefits

Firmly protecting the legitimate rights and benefits of our employees, we have strictly abided by relevant laws and regulations, adhered to the principle of equal employment, treated all employees coequally, opposed employment discrimination based on age, gender, race and other aspects, earnestly safeguarded the legitimate rights and special interests of female employees, strictly implemented the international conventions of prohibiting the use of child labor, and strengthened the inspection of illegal use of child labor by subcontractors. Meanwhile, we have always signed labor contracts with employees according to law, paid social insurance in full, and prioritized the reasonable demands and rights of employees while pursuing economic benefits.

### Implementation of Democratic Management

We have effectively ensured the workers to exercise their right of democratic management, sternly implemented the system of workers' congress, regulations for the disclosure of factory affairs and others. With in-depth promotion of the disclosure of factory affairs and other democratic management work, we have strengthened the work of staff directors and supervisors. For major issues involving the vital interests of employees, we have stuck to their opinions and suggestions, safeguarded their legitimate rights and benefits, made decision-making more scientific and management more democratic, striving to create a united, harmonious and positive vibe.

Data Review 2021 

Total number  
**207,000**



Coverage of employment contracts

**100%**



Proportion of female employees in management

**17.9%**



Coverage of social security

**100%**



- The declaration of proposal by representatives was launched for the first time, with 20 proposals accepted.
- The Regulations on the Election of Community Organizations in Labor Union was strictly implemented. The grassroots cadres in Labor Union were selected with standardized election procedures, forming sound and competent leading groups at all levels.
- Compendium of Labor Union System was compiled and published to improve the level of normalization in Labor Union's work.



## Employees' Development

### Unimpeded Development Channels

Employees are the greatest wealth for a company. Therefore, we actively formulated the "14<sup>th</sup> Five-Year Plan" for human resource management, explored the establishment of a closed-loop human resource management system, and provided organizational guarantee for building a strategic management headquarters. Meanwhile, we strengthened market-oriented recruitment and high-level talent introduction, promoted enterprises at all levels of Group to realize the tenure system and contractual management for managers, and established a quantitative assessment system, forming a solid foundation for the construction of talent system.

■ We actively selected and appointed outstanding young cadres, with 16 people born in the 1970s in the leading groups of the second-tier and key enterprises in the Group.

■ We strengthened the talent team construction of directors and supervisors, with a complete set of competent outside directors, so that the outside directors could be the majority in all board of directors.

■ We promoted the exchange of posts among chief accountants and secretaries of the Commission for Discipline Inspection at all levels to optimize the team structure at different levels.

### Launch of Skill Training

Continuously improving the construction of the training system, we took initiative to hold EMT, classes for the young and middle-aged, training courses for directors and supervisors. The operation and management ability and comprehensive quality of the enterprise leaders were accordingly enhanced, which boosted the foundation of management and

governance of the enterprise. We cultivated the courage of bearing responsibility and taking actions, and established the sense of serving the people, earnestly striving to promote the reform and development of the enterprise to achieve new outcomes, so as to help the Group achieve the strategic goal of high-quality development.

Data Review 2021

The number of trainings of all types carried out

77,120

or so



The person-time of enterprise cadres cultivated

490,000

or so



▼ The successful opening of the fourth EMT that was also called the CYL training course on the study and implementation of the spirit from the important speeches by General Secretary Xi Jinping on July 1st

▼ The electrotechnics competition held in China United Cement Qufu Co., Ltd.

## Employees' Happiness

### Attention on Physical and Mental Health

In 2021, in accordance with the relevant requirements of the Law on Work Safety and the Law on Prevention and Control of Occupational Diseases, all member enterprises of CNBM continued to improve the occupational health protection capacity by strengthening the daily inspection of occupational hazards, correcting and extending the "three simultaneous" examinations, completing the physical examinations for employees in key positions, persisting the improvement of production technology, and intensifying the occupational health training of workers. Accordingly, there were no new employees suffering from occupational diseases in 2021.

Data Review 2021

The person-time of accepting occupational health examination

122,000



289

member companies having established employee mental health systems or measures



■ **Qilianshan Cement** actively carried out occupational health examinations for employees, covering all positions exposed to hazard factors, with **4,480 participants** in the physical examinations.

■ The newly-built clinker warehouse in **Minhe Qilianshan** adopted the unpowered dust suppressant belt, which effectively reduced the unorganized dust emission in the process of conveying the clinker by belt.

■ **Zhongfu Libaodi** built a complete set of dust removal and treatment system for environmental protection and partially allocated mobile industrial vacuum cleaner and other equipment or facilities, effectively reducing the concentration of volatile substances and dust at the work site.

■ **CTC Group** actively cooperated with the National Health Commission to carry out the training of registered occupational hygienists in building materials industry, cultivating a group of occupational hygienists for the Group.

### Assistance for Employees in Need

Data Review 2021

The number of special and difficult employees accepting support

9,924



Input for assisting special and difficult employees

RMB 12.2855

million



We have persisted in the urgent needs of workers in trouble, sincerely caring for them. In the process of relieving workers in need, we have improved the working mechanism constantly. After the deliberation and approval of the Implementation Measures of Helping Workers with the Shanjian Charity Fund of CNBM and the second batch of staff assistance scheme in 2021, we

continued to carry out the "Shanjian Charity Fund" Support Activity for workers in trouble, so as to strengthen the staff morale with practical measures, improve staff happiness and sense of belonging, and unceasingly enhance the cohesion and charisma, which could further boost the Group's production, operation, reform and development.

#### CNBM: Supporting staff in need, Shanjian warmed the heart

On the occasion of the Spring Festival, CNBM distributed funds to the needy workers who applied for the 2020 "Shanjian Charity Fund" support project. Meanwhile, member enterprises at all levels visited some of the difficult workers and sent them care and warmth. The money used for this assistance was donated by the current employees of CNBM and all its member enterprises. Reviewed and approved at the 6th meeting of the Labor Union Committee of CNBM, 118 workers in trouble were confirmed as the objects of support.



## Concern on Employees' Life

Deeply concerning about the well-being of our employees, we have always adhered to humanistic care. In addition to basketball courts, libraries, movie rooms and other activity places built for employees according to the local conditions, we also organized activities such as "Jogging in the National Day", sports meeting and artistic performance to enrich the leisure and cultural life of our workers. Furthermore, we earnestly carried out activities such as "doing practical things for the masses myself" and the selection of model workers and advanced collectives, so as to encourage the enthusiasm of the staff in Group, enhance the cohesion of employees, and strive to achieve the synchronization of business objectives and individual job goals.

Data Review 2021

The number of various activities organized and hosted for employees

**6,796**  
or so



The number of honorary titles of "CNBM's Advanced Collective" awarded

**50**



The number of people who accepted honorary title of "CNBM's Model Workers"

**30**



The number of "the best CNBM people" solicited and announced

**100**



■ Painting and calligraphy exhibitions were held for retired cadres, and May 4<sup>th</sup> symposiums were held to actively solve problems in work and life for young employees. Weekly brand training courses of "Friday Lecture" were also carried out.

■ The "young staff talk" was carried out to better understand the thoughts of young workers and grasp their ideological dynamics.



■ Shanjian Activity Center is built with multi-functional treadmill, spinning bike, comprehensive fitness equipment, table for table tennis and other facilities, and coaches were regularly invited to provide guidance as well as the organization of yoga, kickboxing and other activities.

■ The Labor Union and CCYL Committee jointly held the 12<sup>th</sup> Football Match to enhance the sports awareness of workers.



▼ The best wishes from the Institute of Science and Innovation of CBMA to staff in the group birthday party



▼ The football match for young workers held by Hongda Company

## The Best CNBM People

### The Best CNBM Employees

In the Party's 100-year journey of struggling, the epoch never forgets that they dare to pursue their dreams beyond the limits. They are writing extraordinary stories with ordinary posts and leaving beautiful and touching footprints with their efforts.

### The Best Overseas Employees

Among 196 overseas institutions in 76 countries and regions around the world, there are a group of people showing their passion and responsibility overseas and sticking to the original aspiration and dream of overseas front-line workers with actual actions.

### The Best Front-Line Model Workers

Passion and dedication are their symbols. Staying firmly in the front line, they stick to their own posts persistently for the production and development needs of the enterprise, showing the beauty of front-line workers with responsibility and diligence.



The country's "14<sup>th</sup> Five-Year Plan" has set the tone of the dreams of all CNBM people. CNBM people have been setting the example of loving one's job and daring to take responsibilities by sticking to their work unwaveringly in years. In 76 countries around the world, they been contributing to promoting the building of a community of shared human destiny. Countless moments of their struggle, fraternity, courage, progress, unity and dedication that can't be all recorded have created all those outstanding marks and achievements of CNBM Group and taken up the responsibility to provide "national good materials".

### The Best Poverty Alleviation Workers

In the process from poverty alleviation to rural revitalization, they devote themselves and work hard, sacrificing their youth to the land, actively playing an exemplary role in their respective posts, and making extraordinary achievements.

### The Best Engineering Technicians

The new era belongs to strivers, for they create innumerable miracles with wisdom and diligence. In the face of difficulties, they specialize in "hard bones", turning difficulties into the motivation of improving technology and ability, forging a business card of responsibility with passion and sweat.

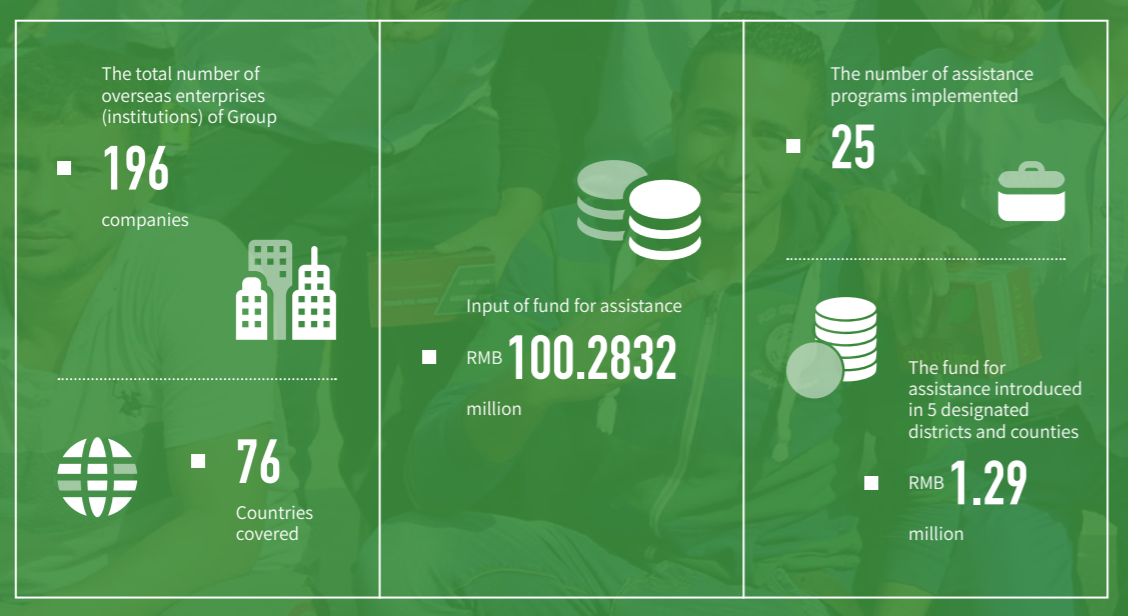
### The Best Research Pioneers

Their persistence and pursuit are tireless with professionalism, concentration and meticulousity. In the exploration of scientific innovation, their perseverance and pursuit of excellence highlight the spirit of craftsmanship, creating the story of scientific and technological innovation of CNBM with devotion.

### The Best Volunteers Fighting Against Epidemic

In the cooperative battle against the epidemic, they sacrifice themselves and work together to protect the city in their own way. They are the most reliable source of strength to overcome the epidemic and convey every city in the country great power to pursue the bright future.





The group photo of Jushi-Egypt Company in the Open Day



05

## Marching Towards a Better Society

CNBM attaches high importance to fulfilling its community responsibility, insists on localized operation, deeply cultivates "The Belt and Road Initiative", and pursues the common development and growth of the enterprise and its region; gives back to the society through our characteristic social welfare; actively conducts volunteer activities, serves the community public welfare, and fulfills its responsibilities as corporate citizens with practical actions; continues the rural revitalization, continuously increases the assistance in various aspects such as people's livelihood, industrial development, education and training, grassroots organization construction, etc., and strives to consolidate the achievements of poverty alleviation, creating more social values for the people.



# Openness and Win-Win Development

## Expansion of Overseas Cooperation

Based on its competitive industries, CNBM further integrates and shares superior resources, constantly optimizes the international business layout, actively innovates the cooperation mode, and promotes foreign joint ventures. Besides, the Group makes two transformations from leading foreign contracted projects to driving foreign contracted projects and overseas investment, and from mainly "going global" to "going global" and "bringing in" equally, so as to further enhance its influence and competitiveness.

China Building Materials Nigeria New Materials Co., Ltd. successfully achieved mass production of calcium silicate board with an annual output of 5 million square meters.



Sinoma International (Nanjing) Nigeria Company successfully delivered the first batch of trailer orders to OLAM Group



Chinese and foreign staff of CMBI Nigeria New Materials Co., Ltd. are passing on their experience on site

Data Review 2021

Investing overseas in basic building materials, new materials, building materials logistics parks and supermarket chains.

More than **40** projects



**196** overseas entities distributed in



**76** countries



Total number of overseas projects

**143**

Contract value

RMB **60.853** billion



New overseas projects

**45**

Contract value

RMB **12.657** billion



## Serving the "Belt and Road" Initiative

The "Belt and Road" is a promising avenue that advances hand in hand. We speed up overseas distribution around the "Belt and Road Initiative" and drive domestic advanced technology, equipment and standards to "go global"; actively practice corporate social responsibility, create a large number of employment opportunities for the local society, train technical talents, fully demonstrate the social responsibility and responsibility of enterprises in China, which is highly praised by the local government and all sectors of society, so as to contribute to the great strength of central enterprises in Community of Shared Future for Mankind. By the end of 2021, the Group's business has expanded to Southeast Africa, Middle East, Central and East Asia, South Asia, Central and Eastern Europe, ASEAN, South America, etc.

### Engineering Service Field

- The international market share of cement and glass engineering of the Group exceeds 65%, and it has contracted 382 production line projects in total, managed nearly 100 smart factories around the world, and provided high-quality engineering and technical services to the whole world.

### Global Supply Chain

- With 29 overseas warehouses and building-material chain supermarkets in 9 countries, CNBM initially sets up a resource allocation system for global buying and global selling.

### Sinoma Cement, NBM PNG LIMITED: "The Belt and Road Initiative" short video was awarded again.

On December 21<sup>st</sup>, 2021, co-sponsored by China Public Diplomacy Association, the SASAC News Center and the World Wide Web, the third "Belt and Road Initiative" 100 Countries Imprint Short Video Contest saw its award ceremony in Beijing. The short video about Sinoma Cement recommended by CNBM, "Building Dreams Together", and the short video "Creating a Better Future" by NBM PNG LIMITED, won the Overseas Popularity Award and the Excellent Works Award, respectively. This is the third consecutive year that the Group has won such awards. Under the camera, it vividly depicted the mental process of enterprises growing with employees, and highlighted a positive effect when CNBM's overseas engineering and technical services took root in local society, performed their social responsibility, promoted win-win cooperation and built a bridge between China and foreign countries.

Scan the QR code to follow the front-line employees and explore the overseas responsibility featured story of CNBM.



### Sinoma International: Feel the presence of Sinoma in Africa

During the second "Smart Use of Resources Day" of CNBM in 2021, four overseas enterprises, namely, NBM PNG LIMITED, Jushi Egypt, Sinoma International (Nigerian) and CNBM Zambia Industrial Park, held "Cloud Opening". Under the camera, it showed the working and living conditions of the company to the public, and their contributions to promoting local economic and social development, improving local people's livelihood, and helping the construction of "the Belt And Road".

NBM PNG LIMITED actively donates to local orphanages and other organizations



Jushi Egypt set up Muslims' canteen for its employees



Sinoma International creates many employment opportunities for the local society every year in Nigeria.



CNBM Zambia Industrial Park is the local capital to build Nachtete Village School.

I envy my friends through this visit. They used to live by farming or doing odd jobs. Now, they have built a new house and bought a car. So great!

— Ekene Augustine Maduforo, local resident in Nigeria



# Rural Revitalization

## Strengthening Safeguards through Top-Level Deployment

In order to assist consolidation and expansion the achievements in poverty alleviation and continue to boost rural revitalization, CNBM actively made overall arrangement that the designated poverty alleviation and development leading group was adjusted into a designated assistance leading group. A special meeting on designated assistance was held, assistance tasks were decomposed and implemented, and guarantee working mechanism for designated assistance districts and counties was formulated in combination with the advantages of enterprises and the needs of assistance districts and counties, so as to make the foundation for poverty alleviation of five designated assistance districts and counties more stable and sustainable.



▼ Zhou Yuxian, Party Secretary and Chairman of the Group, visited the Yongshan County, Zhaoyang District, Zhaotong City, Yunnan to investigate the designed assistance

- Zhou Yuxian, Party Secretary and Chairman of the Group, visited the Yongshan County, Zhaoyang District, Zhaotong City, Yunnan to investigate the designated assistance, and conducted field visits to assistance projects and visited temporary cadres of the Group.
- Sun Lishi, Party Committee Deputy Secretary, Staff Director and Chairman of the Trade Union, and leaders of other groups have been to the assistance front line for field survey for many times, urging and guiding the assistance, thus covering 5 assistance districts and counties.
- Each guarantee unit has set up a rural revitalization leading group and working organization headed by the Party Secretary, and has organized many visits to the guarantee areas and counties to carry out field research.

## Leadership Team to Fight Again

In compliance with the central government's unified deployment of designated assistance, CNBM delegated 11 temporary cadres and the first secretary in the village to five designated assistance districts and counties respectively, so that the rotating handover was completed with the helping cadres at the stage

of poverty alleviation. Besides, it constantly explored the new exercise mode of "double duty" for cadres, completely ensured the assistance work, life and pandemic prevention of the cadres, assessed ideological trends of cadres in a timely manner, and raveled out their concerns.



▼ On February 25<sup>th</sup>, 2021, the National Poverty Alleviation Summary and Commendation Conference was held in the Great Hall of the People in Beijing. Zhao Jian, the first secretary of CNBM stationed in Yangling Village, Jingyuan County, Ningxia, won the honorary title of "National Advanced Individual in Poverty Alleviation"



▼ On April 19<sup>th</sup>, 2021, CNBM commended 91 advanced individuals and 19 collectives that emerged in its poverty alleviation and aid to Xinjiang and Tibet.

# Rural Revitalization to Create Solid Foundation

To make an effective connection between the achievements in poverty alleviation and rural revitalization, CNBM grimly implemented the demands of "four no-picks", and constantly provided more supports for people's livelihood, industrial development, educational training, grassroots organization construction, etc., constantly widened assistance channels, innovated assistance models, actively donated fund, concentrated on building demonstration sites of rural revitalization, and accelerated the high-quality implementation of various decisions for rural revitalization with all efforts.



▼ CNBM donated nine-year compulsory education school in Yongshan County

- Party members and cadres spent their own money to buy gifts for children in designated assistance districts and counties to fulfill their "micro wishes".
- Member companies donated libraries built by the Party, school uniforms and school supplies for students, tents, protective clothing and other pandemic prevention materials to help local communities fight the COVID-19.

Data Review 2021

Assistance invested

RMB **100,283,200**

Implement assistance programs

**25**

Assistance funds

RMB **1.29**

million



## CNBM: Innovative e-commerce assistance can effectively increase farmers' income.

How to let agricultural products out of the mountainous areas into the market? This has been a long-standing difficulty in poor and remote mountainous areas, freeing farmers from destitution. To broaden the marketing channels of agricultural products in such areas, CNBM strived to build the "He Bao Dan" e-commerce platform, developed the assistance mode of all staff consumption to effectively increase farmers' incomes, thus realizing harvested social and economic benefits.

- Through the "He Bao Dan" e-commerce platform, RMB **21.39** million of agricultural products were sold in five districts and counties.
- It organized and conducted four live activities to promote agriculture, with more than **30,000** audience and more than **3,000** orders per live, which led to the sales of RMB **2.68** million of agricultural products.



# Service Community

## Public Welfare Actions

Deeply concerned about the demands of stakeholders, CNBM, with the core concept of "smart use of resources, services for construction", actively performed its community responsibilities, contributed to the society and fulfilled corporate citizens' responsibilities with distinctive social welfare and abundant volunteer activities respectively, widely conducted social commonweal activities such as plague prevention, volunteer service, assistance for employees, volunteer teaching, overseas aid construction, etc., and promoted the development of China's public welfare by establishing the "Shanjian Public Welfare Fund", integrating charitable donations, optimizing public welfare resources, and converging good deeds. In 2021, the number of CNBM volunteers reached 11,517. The Group's total donations amounted to RMB 140.738 million.

### CNBM: The Spirit of Lei Feng is forever inherited, and I volunteer first

In 2021, around Lei Feng Day on March 5<sup>th</sup> and Arbor Day on March 12<sup>th</sup>, the Group's youth members at all levels took action to promote the spirit of volunteer, carried out a variety of voluntary activities, and strive to demonstrate their responsibility as the youth of central enterprises with practical actions, and contributed the youth strength of CNBM staff to the new journey of comprehensively building a modern socialist country!

- The Youth League Committee of Hefei Cement Research & Design Institute launched the "Year of Volunteer Service" activity and etiquette training for young volunteers.
- The Youth League Committee of Geological Exploration Center Jiangsu Headquarters successfully planted 36 Acer sycamore seedlings in Qixia Mountain Scenic Spot, Nanjing citizen's voluntary tree planting base.
- The Youth League Committee of China United Cement Yantai Qixia Co., Ltd. conducted the theme activity of "Planting trees at the right time to add new green to the factory".
- The Youth League Branch of Triumph PV held the reading activity of "Lei Feng Spirit" and participated in the "Youth Actions for Happy Bengbu" to donate blood without compensation.



- The General Party Branch of **CNBM INTERNATIONAL** organized some young Party members in Beijing to carry out "Community Public Welfare Voluntary Service Activities".

- **China Building Materials Academy** provided tents, protective clothing, oral-nasal masks and other pandemic prevention supplies to Jingyuan County pandemic prevention and control sites, effectively alleviating the local pandemic prevention and control emergency.

## Participating in COVID-19 Prevention and Control

Go where there is COVID-19, fight it till it perishes. Under the severe and complex pandemic situation, while strictly doing well in their own pandemic prevention and control, all subsidiaries of CNBM actively responded to the requirements of local governments and organized Party members, cadres and employees to actively participate in the pandemic prevention and control and fight against the pandemic, in a race against time.



▼ The staff of Triumph Science & Technology Group, Shenzhen K&D Technology Co., Ltd immediately supported community nucleic acid detection work

## Assisting in Emergency Relief

CNBM, faced with the unprecedented flood disaster in Henan Province, gave its full support to the flood prevention and disaster-relief work, and donated RMB 10 million to the disaster-stricken areas through the Henan Charity Federation, which was used for emergency rescue and post-disaster recovery to aid local victims to overcome the difficult times; while ensuring the safety of people and property, enterprises in Henan, took an active part in flood prevention with the local government.

Scan the QR code to view: CNBM rushed to the rescue at the front line of flood control and disaster relief in Henan



- **BNBM Xinxiang Co., Ltd** transferred 79 families and masses of affected workers at the first time, resettled 116 families of affected workers and workers, organized 25 people to go to the disaster area to carry out drainage work, and assisted in the transfer of disaster relief materials for three times, becoming the first enterprise in the disaster area to approve the resumption of production.

- **China United Cement Anyang Co., Ltd.** sent rescue commandos to participate in local flood relief, with more than 20 forklifts, 50 tons of manufactured sand and 1,000 sandbags, successfully transferred more than 100 the disaster victims, and successively completed the work of flood relief and post-disaster dredging in eight villages.

- **Zhonglian Tongli Material Co., Ltd** mobilized 100,000 woven bags from enterprises, including China United Cement Dengfeng Co., Ltd, China United Cement Xinan Wanji Co., Ltd, China United Cement Jiyuan Co., Ltd, Luoyang Yellow River Tongli Cement Co., Ltd., Henan Xinxiang Pingyuan Tongli Cement Co., Ltd., quickly loaded and donated them to the front line of flood control.

- Responding to the government's call, **Zhongfu Lianzhong (Anyang) Composite Material Co., Ltd.** selected 20 backbone Party members to form a rescue commando to participate in flood fighting and emergency operations, transfer the masses and reinforce the river bank with the local government.



▼ Pioneer Commando consisting of the Party members in China United Cement Dengfeng Co., Ltd participated in the laying of drainage pipeline at the rescue point.





06

## Assuming the Long-Term Responsibility

A country's big enterprises shoulder the highest responsibility. As a central enterprise of building materials, CNBM has always adhered to the core concept of "smart use of resources to serve the construction", taking "innovation, performance, harmony and responsibility" as its core values, actively undertaking economic responsibility, political responsibility, social responsibility and national responsibility, fully safeguarding the interests of all sectors of society, pursuing green and sustainable development, and actively contributing to the construction of human beautiful homeland.



369

quantitative indicators of social responsibility management

6<sup>th</sup>

among the Top 300 of China Corporate Social Responsibility Development Index (2021)



Puyang Tongli Phase II project under construction



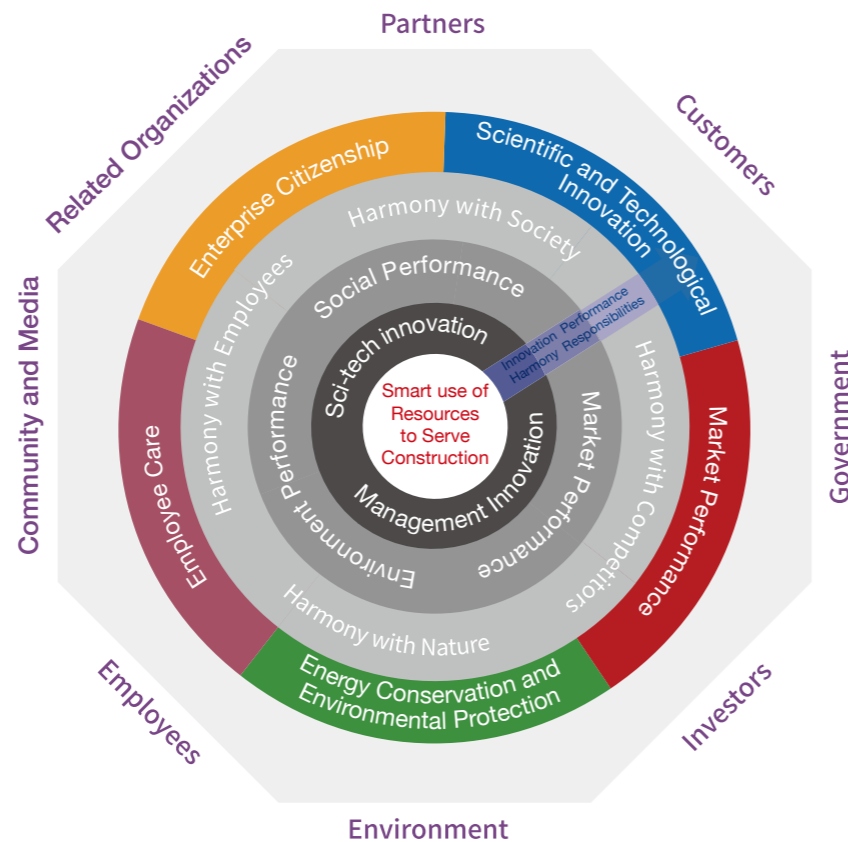
# Value of Responsibility

## Concept of Responsibility

We adhere to the core concept of "smart use of resources to serve the construction", uphold the core values of "innovation, performance, harmony and responsibility", organically combine the technological innovation and management innovation in our development, and pursue the coordination and win-win of market,

environment and society. Besides, we insist on harmony with competitors, nature, employees and society, and finally implement the concept of social responsibility in market performance, technological innovation, energy saving and environmental protection, employee care and corporate citizenship.

Social Responsibility Model of CNBM



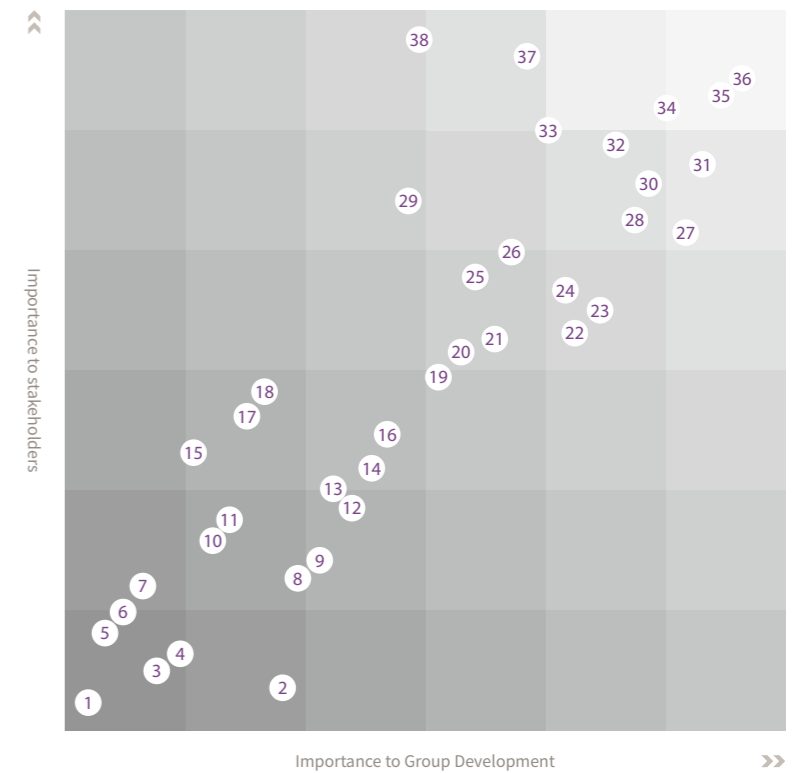
## Selection of Topics

According to the Group's development strategy and the expectations of stakeholders, we planned five social responsibility frameworks: "promoting prosperity with development, creating a better future with science and technology, living in harmony with nature, growing together

with employees, and marching towards a better society", and ranked and selected the topics from two dimensions: "importance to stakeholders" and "importance to the Group's development", thus finalizing the core topics of social responsibility report this year.

Selection of Topics for Social Responsibility Report of CNBM

- 1 Overseas Community Co-construction
- 2 Information Disclosure
- 3 Community Integration
- 4 Communication with Stakeholders
- 5 Public Charity
- 6 Rural Revitalization
- 7 Green Office and Environmental Public Welfare Activities
- 8 Advocating Sustainable Consumption
- 9 Promoting Industry Development
- 10 Democratic Management
- 11 Responsible Procurement
- 12 Overseas Development and International Cooperation
- 13 Supply-side Structural Reform
- 14 State-owned Enterprise Reform
- 15 Intelligent Manufacturing
- 16 Development of New Materials Industry
- 17 Transformation of Scientific and Technological Achievements
- 18 Mechanism for Customer Complaint Resolution
- 19 Responsibility Management
- 20 Employee Rights and Interests
- 21 Green Services
- 22 Responsible Supply
- 23 Concept of Responsibility
- 24 Green Products
- 25 Cultivation of Innovative Talents
- 26 Environmental Management
- 27 Employee Cultivation
- 28 Supply Chain Management



- |   |                                 |
|---|---------------------------------|
| 29 Corporate Governance System                      | 34 Safe Operation               |
| 30 Risk Management and Control                      | 35 Governing Enterprises by Law |
| 31 Green Production                                 | 36 High-quality Development     |
| 32 Strengthening Party Building and Anti-corruption | 37 Quality Management           |
| 33 Innovation Management                            | 38 Credit Business              |



Social Responsibility Planning of CNBM

Value of Responsibility

- Deepening the concept of responsibility
- Deepening the integration of responsibility and business management
- Deepening the mechanism for employee responsibility fulfillment



Responsibility Management

- Strengthening the top-level design of social responsibility
- Improving the organizational system of social responsibility management
- Strengthening the training of social responsibility talents
- Improving the performance evaluation of social responsibility

Responsibility Communication

- Strengthening communication with stakeholders
- Creating an important and sustainable responsible brand
- Developing rich responsibility theme activities
- Creating a normalized responsibility communication platform with stakeholders

Responsibility Sharing

- Enriching the social responsibility management platform
- Developing social responsibility benchmarking
- Strengthening research on responsibilities
- Strengthening external publicity
- Promoting the CSR report preparation of member enterprises

# Responsibility Management

We have incorporated the social responsibility management into the Group's strategy, overall planning and daily operations, improved the responsible organization, continuously built the social responsibility capacity, improved the Group's long-term social responsibility management mechanism through responsibility training and investigation, practically improved the responsibility management capacity and level, and realized the perfection of corporate social responsibility management system.

Organizational Structure

- Establish a social responsibility work promotion leading group as the top leading body headed by the chairman of the board of directors to lead and promote the social responsibility work of the Group
- Based on the headquarters functional organization for social responsibility management, guide and promote member enterprises to strengthen social responsibility management and actively implement the practice of fulfilling their social responsibilities
- With member enterprises at all levels as nodes, and in accordance with the unified requirements of headquarters, clarify the functional departments, provide managers, and implement the practice of fulfilling responsibilities. By the end of 2021, 197 member enterprises have set up their leading social responsibility management organizations, 326 have set up their social responsibility management organizations, and 351 have set up their social responsibility management posts, involving a total of 1,452 full-time and part-time employees for social responsibility management.

Data Review 2021

1,728

sessions of social responsibility events organized or participated in



22,557

person-times of social responsibility-related training for employees



278

sessions of social responsibility assessments or evaluations



Ability Improvement

- Take the CNBM "Shanjian Public Welfare" Fund as an important platform to create a brand of social responsibility
- Keep stable operation of the "CNBM Social Responsibility Management Information System" and achieve online management of personnel and information
- Establish an index system of the Group social responsibility with 369 indicators in all to ensure the integrity of social responsibility reporting
- Strengthen pilot demonstrations, promote corporate accountability practices and participate in various training courses, such as China Social Responsibility 100 Forum

Performance Evaluation

- Prepare and publish annual social responsibility reports, publish performance trends on website columns from time to time, establish an information disclosure system and build an effective communication platform
- Participate in external performance evaluation, implement comprehensive evaluation and benchmarking in reporting quality, accountability performance and responsibility management, learn from each other's strengths and make up for each other's weaknesses for continuous improvement

Continuous Improvement

- Give full play to the resources of the think tank of internal management experts to guarantee the applicability and operability of the substantiality and mechanism of social responsibility management
- Establish cooperative relations with professional organizations, grasp the development trends of social responsibility at home and abroad, and ensure the professionalism and compliance of the Group's social responsibility management system
- Enable the extroverted responsibility management, such as brand responsibility activities, deep responsibility communication and theme responsibility publicity, so that the influence of responsibility is increased gradually
- Continuously improve the member enterprises' CSR report publishing rate and quality, and promote the systematization and normalization of CSR performance



Data Review 2021 

**148,305**  
person-times of communication between internal/external stakeholders 

**14,307**  
sessions of communication between enterprise senior leaders and internal/external stakeholders 

Joined **2**  
social organizations or conventions at home and abroad 

## Responsibility Communication

We always pay attention to the demands of stakeholders, including investors, government, employees, customers, partners, relevant groups, communities and media, the environment, etc.; deliver information on corporate responsibility through annual social responsibility reports, official account and the "social responsibility" section of our official website, strengthen information

disclosure, enhance communication with the public, respond to public concerns in a timely manner, and expand communication channels with stakeholders; in the virtuous cycle of disclosure, communication and improvement, continue to improve our responsibility communication ability and enhance public awareness and recognition of CNBM.

### "Smart Use of Resources, Innovation and Development"-- the Second Opening Event "Smart Use of Resources Day" of CNBM

On September 2<sup>nd</sup>, 2021, CNBM held the opening ceremony of the second "Smart Use of Resources Day". This event lasted for two months, and 93 enterprises in 72 cities in five countries around the world opened simultaneously. In this event, all sectors of the society and employees learned about the development of CNBM from an unknown state-owned enterprise to a world top 500 enterprise with the growth of New China through various activities. Especially, on the centenary of the founding of the Party, CNBM has adhered to the combination of the history of the Party and the development history of CNBM, and the spirit of uniting and striving for development, which has further strengthened their awareness and recognition of employees and the public on the corporate culture and material manufacturers of CNBM, and fully demonstrated CNBM's confidence and determination on innovative development.

The ceremony was broadcast live by CNBM's WeChat video account, Tik Tok account and CCTV video account throughout the whole process. A total of more than 50,000 employees of CNBM and social netizens participated in watching and praising the live broadcast. The live broadcast was awarded the third prize on the 8<sup>th</sup> "Good News of State-owned Enterprises" in media category sponsored by the SASAC News Center and the Central Enterprise Media Alliance.

Scan the QR code to view more exciting videos on the Live Open Activity Ceremony and.



▼ In the opening event of the 2<sup>nd</sup> "Smart Use of Resources Day", 93 enterprises around the world showed their elegance.

| Stakeholders  | Communication Mode  | Focus   | Response Measures   |
|---|---|---|---|
| <br>Investors              | <ul style="list-style-type: none"> <li>Periodic report</li> <li>Corporate report</li> <li>Promotion activities</li> <li>Shareholder dialogue and feedback</li> <li>New media and network platform interaction</li> </ul>  | <ul style="list-style-type: none"> <li>Enterprise performance</li> <li>Interests of shareholders and creditors</li> <li>Authenticity, accuracy, timeliness and completeness of information disclosure</li> <li>Sustainability of development</li> </ul>   | <ul style="list-style-type: none"> <li>Sustainable high-quality management</li> <li>Perfect information disclosure mechanism</li> <li>Improve the value of enterprises</li> <li>Regulate corporate governance</li> <li>Protect investors' interests</li> </ul>  |
| <br>Government             | <ul style="list-style-type: none"> <li>Publication of laws and regulations</li> <li>Special reports and visits</li> <li>Information submission</li> <li>Assessment of work objectives</li> <li>Industry associations</li> </ul>   | <ul style="list-style-type: none"> <li>Corporate governance</li> <li>Safety, environment and compliance requirements</li> <li>Secure supply</li> <li>Employment opportunities</li> <li>Development of local economy</li> <li>Response to climate changes</li> </ul>   | <ul style="list-style-type: none"> <li>Operate in accordance with the law and implement national policies</li> <li>Sustainable high-quality management</li> <li>Tax payment</li> <li>Provide jobs</li> <li>Adhere to green manufacturing</li> </ul>   |
| <br>Customers              | <ul style="list-style-type: none"> <li>Customer meetings and consultation</li> <li>Market research</li> <li>Daily contact</li> <li>Customer feedback mechanism</li> <li>Telephone service</li> <li>New media and network platform interaction</li> <li>Product packaging information</li> </ul> | <ul style="list-style-type: none"> <li>Enterprise credit</li> <li>Customer relationship</li> <li>Quality of products and services</li> <li>Product innovation</li> <li>Health and safety</li> </ul>   | <ul style="list-style-type: none"> <li>Provide high-quality products and services</li> <li>Advocate green consumption</li> <li>Improve quality management</li> <li>Protect customers' privacy</li> <li>Launch technological innovation</li> <li>Advocate sustainable consumption</li> <li>Standardize safety and environmental protection management</li> </ul>               |
| <br>Partners             | <ul style="list-style-type: none"> <li>Contract negotiation</li> <li>Bidding conference</li> <li>High-level meetings</li> <li>Document and correspondence contacts</li> <li>Daily business communication</li> <li>New media and network platform interaction</li> </ul>                         | <ul style="list-style-type: none"> <li>Price and prompt payment</li> <li>Long-term partnership</li> <li>Profit distribution</li> <li>Information resources sharing</li> <li>Credit and reciprocity</li> <li>Risk prevention</li> </ul>  | <ul style="list-style-type: none"> <li>Credit business</li> <li>Promote suppliers' responsibility performance</li> <li>Establish effective partnership</li> <li>Establish an effective communication mechanism</li> </ul>   |
| <br>Employees            | <ul style="list-style-type: none"> <li>Employee congress</li> <li>Openness of factory affairs</li> <li>Labor contract</li> <li>Rationalization proposals</li> <li>Normal communication</li> <li>Letters and visits</li> <li>New media and network platform interaction</li> </ul>               | <ul style="list-style-type: none"> <li>Enterprise performance</li> <li>Corporate governance</li> <li>Employee rights and interests</li> <li>Career development planning</li> <li>Complaint handling</li> <li>Occupational health</li> <li>Democratic management</li> <li>Openness of factory affairs</li> </ul> | <ul style="list-style-type: none"> <li>High-quality management</li> <li>Protect employees' rights and interests</li> <li>Provide competitive pay</li> <li>Improve employee welfare</li> <li>Strengthen employee training</li> <li>Provide safe working environment and health protection</li> <li>Establish effective communication</li> <li>Democratic management</li> </ul> |
| <br>Community and Media  | <ul style="list-style-type: none"> <li>Sign public welfare agreements</li> <li>Participate in volunteer activities</li> <li>Daily contact</li> <li>Open day activities</li> <li>Media interview</li> <li>New media and network platform interaction</li> </ul>                                  | <ul style="list-style-type: none"> <li>Planning affairs</li> <li>Environmental protection and response to climate changes</li> <li>Joint construction of a harmonious community</li> <li>Occupational safety and health</li> </ul>  | <ul style="list-style-type: none"> <li>Establish and improve safety and occupational health management system</li> <li>Increase investment</li> <li>Timely information disclosure</li> <li>Improve public welfare investment</li> <li>Participate in community activities</li> <li>Promote green production and protect ecological environment</li> </ul>                     |
| <br>Social Organizations | <ul style="list-style-type: none"> <li>Regular participation in meetings or activities</li> <li>Daily contact</li> <li>New media and network platform interaction</li> </ul>  | <ul style="list-style-type: none"> <li>Environmental conservation</li> <li>Promote sustainable development jointly</li> </ul>   | <ul style="list-style-type: none"> <li>Play membership role</li> <li>Provide economic and technical support</li> <li>Establish a cooperative relationship</li> </ul>  |

| Multi-field  | Multi-form  | Multi-participation  | Multi-angle  | Multi-object  |
|--|---|--|--|---|
| Integrate the concept of social responsibility into daily work and communication, with the existing business communication combined with responsibility communication. | Keep continuous contact with stakeholders through questionnaires and special visits, etc. | Keep continuous communication with stakeholders; senior leaders, as the foregoers of responsibility communication, personally participate in social responsibility communication in different levels and dimensions. | Collect and summarize stakeholders' comments on a regular basis and analyze insufficiencies for continuous improvement in a comprehensive and objective manner by means of public opinion collection, media information mining, etc. | Give timely feedback through democratic and convenient information channels by the Group's internal management experts and grass-roots employees, as important internal stakeholders. |



# Responsibility Sharing

## Guided by Responsibility

We actively respond to the policy guidance of the State-owned Assets Supervision and Administration Commission of the State Council on fulfillment of social responsibility by enterprises, and consciously take responsibility for stakeholders, society and environment throughout the operation, so as to maximize the integrated value of economy, society and environment and promote sustainable development. Meanwhile, as an important member enterprise of the UN Global Compact and the World Cement Sustainable Development Initiative (CSI), we have actively participated in global environmental protection exchanges and cooperation, contributed wisdom and solutions to building a beautiful home for mankind, demonstrating the responsibility of central enterprises in the process of internationalization.

- We recognize and abide by the "Ten Principles of the Global Compact" and actively contribute to the achievement of the sustainable development goals of the United Nations;
- We take the initiative to share our experience in theories and practice in terms of social responsibility inside and outside the industry and promote the development of social responsibility in China;
- We actively participate in social responsibility sharing and initiative activities in different fields, participate in launching China Social Responsibility 100 Forum;
- We rely on China Federation of Industrial Economics, China Building Material Federation, China Building Materials News and other platforms to disseminate ideas, share experiences and launch initiatives, and work with stakeholders to seek better ways of sustainable development.

## Driving Development of Supply Chain

We attach high importance to the management of suppliers. The "Bidding and Purchasing Management Platform" created by the Group is a multi-purpose service platform integrating bidding, purchasing and sales, providing supply chain enterprises with procurement sourcing and whole-process e-bidding and e-purchasing services. The Platform has 100,000+ quality suppliers, 4,000+ registered bid evaluation experts in the building materials industry. In addition, we stress the management of suppliers, strictly select suppliers, incorporate social responsibility into the supplier evaluation system, and urge suppliers to take social and environmental responsibilities. Besides, the Platform strictly prevents "black-box operation" in bidding, eliminates commercial bribery and enables honest operations, fair trading and transparent procurement by promoting the integration of e-bidding and e-purchasing, standardization of the bidding process, transparency

of the bidding performance and informatization of the bidding management.

Meanwhile, we insist in the green procurement and prefer environment-friendly products when sourcing raw materials; prefer clean products when procuring energy; refer recyclable products and reject the excessive packaging when purchasing daily office necessities.

CNBM wishes to join hands with all for mutual progress, enhance win-win cooperation in such fields as green economy, intelligent manufacturing, new infrastructure construction, new materials and internationalization, intensify cooperation between central and local authorities, mutual progress of the State and the people as well as domestic and foreign integration, actively seek the greatest common interest in development, strive to break new ground in win-win cooperation.

### Data Review 2021

Operating agreement fulfillment rate

99.6%



Number of companies with supply chain responsibility evaluation and investigation in place

1,041



Number of annual suppliers completing responsibility evaluation and review

56,525



Number of suppliers removed from our list due to noncompliance with corporate social responsibility

179



Number of potential suppliers rejected due to noncompliance with corporate social responsibility

391



Trainings offered to subcontractors and suppliers on safety, energy and laws

193,945



Responsible procurement

RMB 205.5

billion



## Responsible Supply

We are committed to supplying reliable, green and environmentally-friendly building materials, focusing on providing products and service supports for the development of new energy industry, adhering to the concept that the interests of the industry are higher than those of enterprises, deepening the supply-side structural reform, so as to promote the structural adjustment, transformation and upgrading of the building materials industry, and cooperate with industrial chain enterprises in building CNBM into a platform for stakeholders to jointly create values.

- We have fully promoted the construction and certification of the quality management standard systems;
- We have set up a pre-sales consultation, in-sales reception and after-sales service system to respond to and properly deal with customers' complaints and inquiries in an immediate manner, so as to improve customer satisfaction;
- We have built a professional customer service team, able to provide professional technical training for dealers on a regular basis;
- We have organized customer training meetings to carry out product promotion and offer customers the basic knowledge of green building materials, the considerations in building materials selection and use, and the knowledge of product anti-counterfeiting;
- We have always emphasized the protection of customer's privacy by keeping customer data under strict management;
- We have established modern logistics parks for rational planning of supply and marketing as well as logistics schemes, reducing resource occupation and ultimately improving sales efficiency;
- We have built an Internet sales platform, providing worldwide online trading services for building materials to reduce carbon emissions related to customers and sales representatives during business travel.

### Data Review 2021

Yearly substantive complaints received due to betrayal of customer information

0



Rate of proper response and handling of customer complaints

98.7%



Number of manufacturing companies passing quality standard system certification

751



Number of customers participating in product knowledge popularization and trainings

147,385



Percentage of main products with national casual inspection FPY of 100%

99.9%



Products, services or brands winning honors over municipal level

1,152



Sales volume of bulk cement

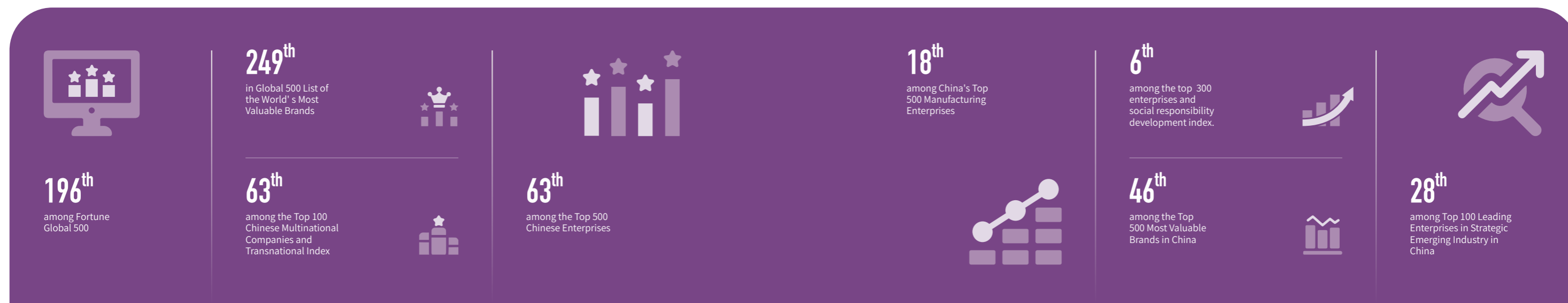
275

million tons





# Honor of Responsibility



## CNBM

- Five individuals together with five collectives won the commendation of "Outstanding Party members, exemplary Party workers, and advanced community-level Party organizations" from the central enterprises of SASAC.
- A group of collectives and individuals won the honor of "National May Day Labor Award" and "Advanced Individual in Poverty Alleviation"

- Xining 10,000-ton carbon fiber base together with spacecraft Tianhe core module, China-Laos Railway and Baihetan Hydropower Station, won the top ten super projects of central enterprises in 2021.
- Five works, namely, Red Finance and Token for A Hundred Years (with the participation of the Group), short video of Silent Creation, China-made photovoltaic power station with the largest single unit capacity in Europe, live broadcast of the second "Smart Use of Resources Day" opening event, and "Online Opening" of Zambia Industrial Park won the "Good News of State-owned Enterprises"

### Sinoma Tech, Nanjing Fiberglass & Design Research Institute Co., Ltd., CNBMEP

- Their two achievements won the first prize of National Science and Technology Progress Award and the second prize of technological invention respectively.

### BNBM, China Jushi

- They were awarded the title of "State-owned Key Enterprise Management Benchmark and Action Benchmark Enterprise".

### BNBM

- Its participation in the Green Chain Action of Real Estate won the first Asian "2021 Constellation Award, Climate Action and Environment" category award.
- "Longpai" was listed as "China Brand Annual Award NO.1" and won the first place in China Brand Annual Award.

### China Jushi

- It was listed as "Top 500 ESG Excellent Enterprises"

### Bengbu Glass Industry Design and Research Institute, CTIEC

- They were listed as national technological innovation demonstration enterprises.

### Bengbu Glass Industry Design and Research Institute

- It won the fifth "Anhui Provincial Government Quality Award".

### Taishan Fiberglass, Nanjing Fiberglass & Design Research Institute Co., Ltd.

- They were selected into the sixth batch of single champion list of manufacturing industry.

### Taishan Fiberglass

- As the only enterprise in the building materials industry, it was selected as the "National Quality Benchmark" in 2021.

### Ruitai Technology, Harbin Fiberglass Research Institute Co., Ltd.

- A group of enterprises including both were listed as "specialized and sophisticated enterprises" little giants by the Ministry of Industry and Information Technology

### CNBM Information

- "China Building Materials Cement Cloud Industry Big Data Platform" was listed as the pilot demonstration project of big data industry development by the Ministry of Industry and Information Technology.

### Sinoma Construction (Russia)

- It won the "Excellent Construction Enterprise" Award in Russia in 2020.

### Sinoma Pingxiang Cement Co., Ltd.

- It won the "China's Top 100 Innovative Building Materials Enterprises in 2021" and "China's Top 100 Building Materials Enterprises with the Most Growth Potential in 2021" awarded by China Building Materials Enterprise Management Association.

### Sinoma Cement, BNBM PNG LIMITED

- They were awarded the Overseas Popularity Award and Outstanding Works Award in the third "The Belt and Road Initiative" 100 Countries Imprints Short Video Contest, respectively.



Sinoma Construction (Russia) was awarded "Excellent Construction Enterprise" in Russia.



BNBM won the Asia "Constellation Awards 2021: Climate Action and the Environment" category award.



## Future Prospects

The year 2022 marks the convening year of 20<sup>th</sup> CPC National Congress and the key journey of the "14<sup>th</sup> Five-Year Plan" as well as the ending year of the three-year actions of state-owned enterprise reform, safety rectification and benchmarking. On the new journey, guided by the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, we will thoroughly implement the decision-making and deployment of the CPC Central Committee and the State Council to target key points and grasp the cruxes as deployed by the State-owned Assets Supervision and Administration Commission (SASAC) for the central enterprises, and comprehensively launch a new journey of high-quality development during the "14<sup>th</sup> Five-Year Plan", so as to show greater action of responsibility on the way to the new journey.

### Upholding the Party's overall leadership

We will always uphold the Party's overall leadership over state-owned enterprises, and persist in arming our minds, calibrating our course and gathering strength with the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, and ensure high-quality development under the high-quality Party building; balance the work based on politics, consciously practice the willpower of the Party, serve the needs of the people, and implement the national strategy; based on the "Two Overall Situations" and the "Top Priorities of the Country", live up to the "Two Maintenances" with practical actions to effectively transform the advantages of Party building into the innovation, development and competitive advantages of enterprises.

### Upholding the new development concept

We will always uphold the high-quality development with innovation as its first driving force, coordination as its endogenous characteristic, green as its universal form, openness as its only path, and sharing as its fundamental purpose, resolutely abandon the complex of speed and scale, accelerate the change of the development mode, and shoulder the vital mission with the advanced equipment for the country, so as to continuously consolidate the vital material and political foundation of Socialism with Chinese characteristics.

### Upholding the "Four-sphere Integrated Plan" and comprehensive innovation

We will always uphold the innovation-drive strategy, coordinate the strategic rationality with economic rationality, enhance the core competitiveness with sci-tech innovation, improve the quality, reduce the cost and increase the efficiency with management innovation, promote the win-win results of stakeholders with business model innovation, and stimulate the vitality and sustainable development with institutional mechanism innovation. In addition, we will always keep the courage to bring forth new ideas, the boldness to be the first as well as the vigorous vitality to continuously foster new growth impulses.

### Upholding the reform path of state-owned capital investment enterprises

We will always uphold the modern enterprise system with China characteristics, follow the laws of market economy as well as be confident in the reform road, and accelerate the "Three Major Changes" from managing enterprises to managing capitals, from building materials to multi-purpose materials, and from local market to global distribution, so as to continuously stimulate the vitality of enterprises and improve their efficiency.





# Appendix

## Responsibility Performance

## Market Performance

Fortune Top 500 Building Material Enterprises in 2022

| Ranking in 2022 | Company Name      | Revenues in 2021 (USD million) | Country     |
|-----------------|-------------------|--------------------------------|-------------|
| 196             | CNBM              | 64416.6                        | China       |
| 252             | Saint-Gobain      | 52211.8                        | France      |
| 353             | Anhui Conch Group | 39699.5                        | China       |
| 460             | CRH               | 30981                          | Ireland     |
| 488             | Holcim            | 29362.1                        | Switzerland |

Data source: FortuneChina.com

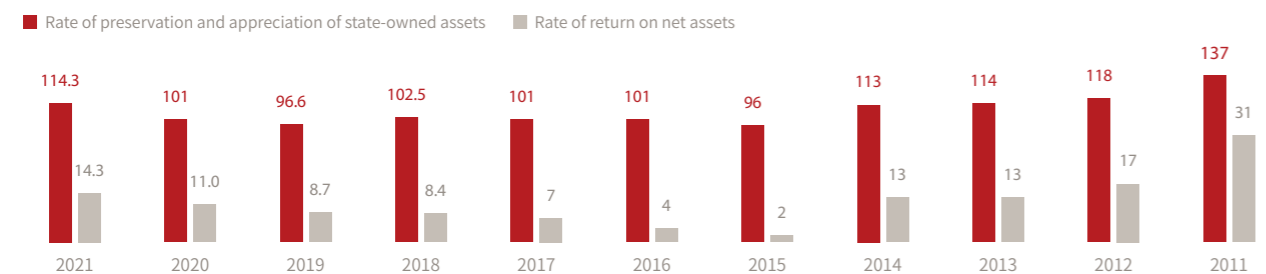
Production of Cement from 2011 to 2021 Unit: 100 million tons

| Year | Production of Cement |
|------|----------------------|
| 2021 | 3.5                  |
| 2020 | 3.5                  |
| 2019 | 3.7                  |
| 2018 | 3.4                  |
| 2017 | 3.4                  |
| 2016 | 3.2                  |
| 2015 | 2.4                  |
| 2014 | 2.5                  |
| 2013 | 2.4                  |
| 2012 | 2.7                  |
| 2011 | 1.9                  |

Total Revenues and Total Profits from 2011 to 2021 Unit: RMB 100 million

| Year | Revenues | Total Profits |
|------|----------|---------------|
| 2021 | 4155.1   | 386.9         |
| 2020 | 3941.0   | 306.1         |
| 2019 | 3981.0   | 235.2         |
| 2018 | 3480.0   | 206.6         |
| 2017 | 3021.2   | 151.1         |
| 2016 | 2612.3   | 75.8          |
| 2015 | 1992.5   | 38.4          |
| 2014 | 2504.3   | 130.1         |
| 2013 | 2522.6   | 115.1         |
| 2012 | 2174.3   | 111.6         |
| 2011 | 1940.9   | 158.5         |

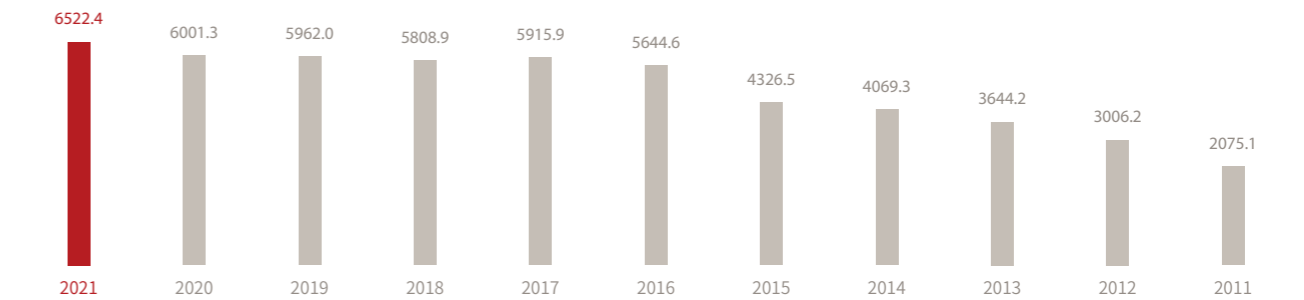
Rate of Preservation and Appreciation of State-owned Assets and Rate of Return on Net Assets from 2011 to 2021 Unit: %



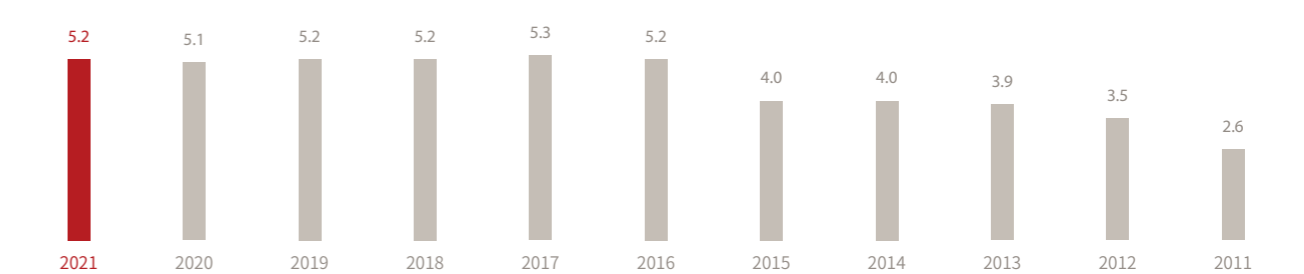
Performance of Listed Companies in 2021 Unit: RMB

| Stock Name                    | Stock Exchange                   | Stock Code | Dividends per share | Earnings per share |
|-------------------------------|----------------------------------|------------|---------------------|--------------------|
| CNBM                          | Hong Kong Exchanges and Clearing | 03323.HK   | 0.6930              | 1.9230             |
| Tianshan Cement               | Shenzhen Stock Exchange          | 000877.SZ  | 0.3300              | 1.5653             |
| Ningxia Building Materials    | Shanghai Stock Exchange          | 600449.SH  | 0.5400              | 1.6800             |
| Qilianshan Cement             | Shanghai Stock Exchange          | 600720.SH  | 0.4500              | 1.2206             |
| China Jushi                   | Shanghai Stock Exchange          | 600176.SH  | 0.4800              | 1.5100             |
| BNBM                          | Shenzhen Stock Exchange          | 000786.SZ  | 0.6550              | 2.0780             |
| Sinoma Tech                   | Shenzhen Stock Exchange          | 002080.SZ  | 0.6350              | 2.0102             |
| Sinoma International          | Shanghai Stock Exchange          | 600970.SH  | 0.2300              | 0.8200             |
| Ruitai Technology             | Shenzhen Stock Exchange          | 002066.SZ  | 0.0000              | 0.2069             |
| CTC                           | Shanghai Stock Exchange          | 603060.SH  | 0.1260              | 0.4186             |
| Triumph Science & Technology  | Shanghai Stock Exchange          | 600552.SH  | 0.1000              | 0.2061             |
| Luoyang Glass                 | Shanghai Stock Exchange          | 600876.SH  | 0.0000              | 0.4600             |
| Luoyang Glass Company Limited | Hong Kong Exchanges and Clearing | 1108.HK    | 0.0000              | 0.4600             |
| Sinoma Energy Conservation    | Shanghai Stock Exchange          | 603126.SH  | 0.0850              | 0.2291             |

Total Assets from 2011 to 2021 Unit: RMB 100 million



Cement Capacity from 2011 to 2021 Unit: 100 million tons





## Sci-tech Innovation

Science and Technology Awards at or above the Provincial and Ministerial Level from 2011 to 2021 Unit: Item

| Year | Science and Technology Awards at or above the Provincial and Ministerial Level | National Science and Technology Progress Awards |
|------|--|---|
| 2021 | 116  | 1   |
| 2020 | 109  | 0   |
| 2019 | 166  | 3   |
| 2018 | 231  | 1   |
| 2017 | 197  | 2   |
| 2016 | 173  | 2   |
| 2015 | 123  | 0   |
| 2014 | 117  | 1   |
| 2013 | 145  | 1   |
| 2012 | 152  | 0   |
| 2011 | 132  | 2   |

Annual Patent Application and Authorization from 2011 to 2021 Unit: Item

| Year | New patent application | Invention patents | Patents newly authorized | Invention patents |
|------|------------------------|-------------------|--------------------------|-------------------|
| 2021 | 4004                   | 1820              | 3745                     | 747               |
| 2020 | 4436                   | 1821              | 2576                     | 532               |
| 2019 | 3308                   | 1638              | 1804                     | 478               |
| 2018 | 2287                   | 1056              | 1571                     | 385               |
| 2017 | 2144                   | 1039              | 1524                     | 428               |
| 2016 | 2156                   | 880               | 1793                     | 455               |
| 2015 | 1568                   | 566               | 1492                     | 193               |
| 2014 | 1571                   | 531               | 1381                     | 106               |
| 2013 | 1262                   | 373               | 848                      | 128               |
| 2012 | 766                    | 228               | 729                      | 143               |
| 2011 | 630                    | 170               | 487                      | 80                |

Expenditure on Scientific Research Activities from 2011 to 2021 Unit: RMB 100 million

| Year | Expenditure on research and test development |
|------|--|
| 2021 | 147.2  |
| 2020 | 119.1  |
| 2019 | 95.9   |
| 2018 | 81.9   |
| 2017 | 59.3   |
| 2016 | 51.2   |
| 2015 | 40.9   |
| 2014 | 41.6   |
| 2013 | 36.2   |
| 2012 | 33.4   |
| 2011 | 31.6   |

Standards – CNBM Presiding over and Participating in Compilation or Revision from 2011 to 2021 Unit: Item

| Year | Total Standards | International | National | Industrial |
|------|-----------------|---------------|----------|------------|
| 2021 | 130             | 4             | 84       | 42         |
| 2020 | 74              | 3             | 39       | 32         |
| 2019 | 88              | 0             | 52       | 36         |
| 2018 | 167             | 4             | 90       | 73         |
| 2017 | 122             | 4             | 90       | 28         |
| 2016 | 91              | 2             | 57       | 32         |
| 2015 | 62              | 2             | 36       | 24         |
| 2014 | 104             | 3             | 35       | 66         |
| 2013 | 59              | 1             | 8        | 50         |
| 2012 | 22              | 1             | 5        | 16         |
| 2011 | 28              | 1             | 15       | 12         |

Accumulative Patents from 2011 to 2021 Unit: Item

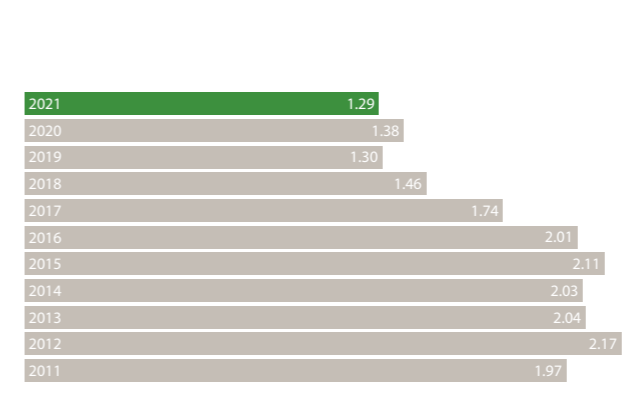
| Year | Accumulative patents | Invention patents |
|------|----------------------|-------------------|
| 2021 | 17642                | 4577              |
| 2020 | 14463                | 3816              |
| 2019 | 12124                | 3164              |
| 2018 | 10967                | 2765              |
| 2017 | 10024                | 2403              |
| 2016 | 8408                 | 1913              |
| 2015 | 5663                 | 900               |
| 2014 | 4255                 | 687               |
| 2013 | 3231                 | 589               |
| 2012 | 2549                 | 448               |
| 2011 | 1606                 | 288               |

Revenues from sci-tech innovation from 2011 to 2021 Unit: RMB 100 million

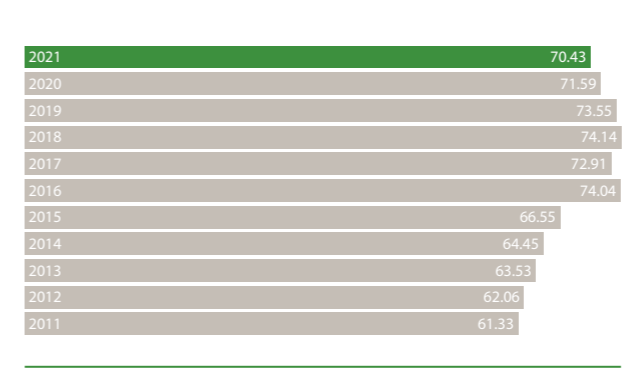
| Year | Revenues from sci-tech innovation | New product sales revenues |
|------|-----------------------------------|----------------------------|
| 2021 | 34.7                              | 810.6                      |
| 2020 | 35.2                              | 754.7                      |
| 2019 | 28.4                              | 577.6                      |
| 2018 | 30.1                              | 555.9                      |
| 2017 | 16.6                              | 468.5                      |
| 2016 | 15.7                              | 339.0                      |
| 2015 | 11.5                              | 256.5                      |
| 2014 | 8.8                               | 289.9                      |
| 2013 | 10.3                              | 259.4                      |
| 2012 | 9.4                               | 248.4                      |
| 2011 | 11.0                              | 240.3                      |

## Energy Conservation and Environmental Protection

Comprehensive Energy Consumption per RMB 10,000 Output Value from 2011 to 2021 Unit: ton of standard coal/RMB 10,000



Comprehensive Energy Consumption per Ton of Cement from 2011 to 2021 Unit: kg of standard coal/ton



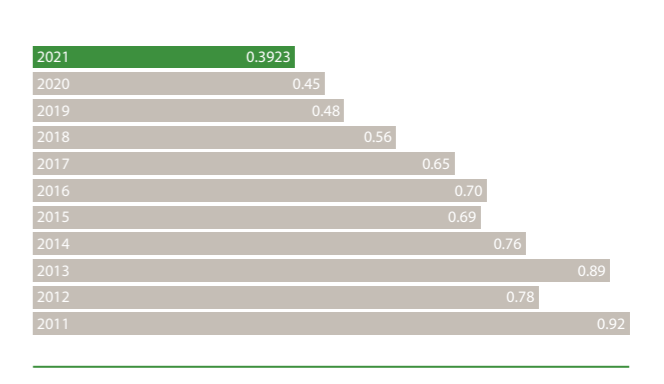
Performance of Solid Waste Disposal and Utilization from 2011 to 2021

| Year | Solid waste consumption (10,000 tons) | Disposal rate of self-produced solid waste (%) |
|------|---------------------------------------|--|
| 2021 | 13121                                 | 96.3   |
| 2020 | 17880                                 | 91.7   |
| 2019 | 14967                                 | 99.9   |
| 2018 | 9900                                  | 92.8   |
| 2017 | 15615                                 | 99.0   |
| 2016 | 14909                                 | 88.6   |
| 2015 | 7545                                  | 98.5   |
| 2014 | 7882                                  | 98.0   |
| 2013 | 6191                                  | 99.2   |
| 2012 | 9700                                  | 100  |
| 2011 | 6500                                  | 100  |

SO<sub>2</sub> and COD Emissions per RMB 10,000 Output Value from 2011 to 2021 Unit: kg/RMB10,000

| Year | SO <sub>2</sub> emissions per RMB 10,000 output value | COD emissions per RMB 10,000 output value |
|------|---|---|
| 2021 | 0.33  | 0.04                                      |
| 2020 | 0.42  | 0.04                                      |
| 2019 | 0.62  | 0.03                                      |
| 2018 | 1.09  | 0.03                                      |
| 2017 | 1.07  | 0.03                                      |
| 2016 | 1.60  | 0.05                                      |
| 2015 | 1.46  | 0.06                                      |
| 2014 | 1.36  | 0.06                                      |
| 2013 | 1.39  | 0.07                                      |
| 2012 | 1.45  | 0.07                                      |
| 2011 | 1.60  | 0.12                                      |

Nitrogen Oxide Emissions per Ton of Cement Clinker from 2011 to 2021 Unit: kg/ton



Performance in Utilization of Water Resources from 2011 to 2021

| Year | Fresh water consumption per RMB 10,000 output value (ton/RMB 10,000) | Fresh water consumption per ton of cement clinker (ton/ton of cement clinker) | Utilization rate of circulating water (%) |
|------|--|---|---|
| 2021 | 5.4  | 0.53  | 97.8                                      |
| 2020 | 5.3  | 0.49  | 95.1                                      |
| 2019 | 3.6  | 0.34  | 90.0                                      |
| 2018 | 7.9  | 0.45  | 90.8                                      |
| 2017 | 7.1  | 0.51  | 96.2                                      |
| 2016 | 6.2  | 0.38  | 93.7                                      |
| 2015 | 7.2  | 0.46  | 93.5                                      |
| 2014 | 6.2  | 0.41  | 90.3                                      |
| 2013 | 8.0  | 0.41  | 96.4                                      |
| 2012 | 5.0  | 0.33  | 94.7                                      |
| 2011 | 5.5  | 0.37  | —   |



## Employee Care

Employee Profile from 2011 to 2021

Unit: Person

| Year | Total number | Foreign, Hong Kong, Macao and Taiwan employees | Ethnic minority employees | Disabled employees | Proportion of female employees in management |
|------|--------------|--|---------------------------|--------------------|--|
| 2021 | 206910       | 881  | 6199                      | 1478               | 17.9   |
| 2020 | 202844       | 1036   | 5725                      | 1731               | 16.9   |
| 2019 | 204763       | 483  | 5808                      | 1729               | 16.2   |
| 2018 | 208680       | 1059   | 5167                      | 1697               | 18.7   |
| 2017 | 221421       | 750  | 5985                      | 1732               | 18.4   |
| 2016 | 234511       | 1126   | 5964                      | 1875               | 18.3   |
| 2015 | 176610       | 841  | 3521                      | 1449               | 17.2   |
| 2014 | 176854       | 892  | 3120                      | 2263               | 18.4   |
| 2013 | 179421       | 1234   | 3031                      | 1685               | 18.1   |
| 2012 | 165652       | 1190   | 2706                      | 1620               | 13.5   |
| 2011 | 126385       | 594  | 3516                      | 1023               | 11.6   |

Progress of Enterprise Annuity from 2011 to 2021

| Year | Number of member enterprises participating in enterprise annuity (entity) | Number of employees participating in enterprise annuity (person) |
|------|---|--|
| 2021 | 580   | 104210   |
| 2020 | 531   | 95554  |
| 2019 | 207   | 56174  |
| 2018 | 100   | 35644  |
| 2017 | 74  | 24093  |
| 2016 | 71  | 22871  |
| 2015 | 68  | 22165  |
| 2014 | 67  | 21750  |
| 2013 | 67  | 21131  |
| 2012 | 66  | 20392  |
| 2011 | 53  | 13368  |

Occupational Health and Safety Investment from 2011 to 2021

Unit: RMB 10,000

|      |        |
|------|--------|
| 2021 | 162000 |
| 2020 | 151500 |
| 2019 | 123697 |
| 2018 | 108357 |
| 2017 | 87032  |
| 2016 | 79527  |
| 2015 | 57249  |
| 2014 | 43221  |
| 2013 | 31363  |
| 2012 | 30324  |
| 2011 | 12191  |

Employment Contract, Social Security Coverage and Labor Union Membership from 2011 to 2021

Unit: %

| Year | Coverage of employment contracts | Coverage of social security | Proportion of employees with labor union membership |
|------|----------------------------------|-----------------------------|---|
| 2021 | 100                              | 100                         | 84  |
| 2020 | 100                              | 90                          | 78  |
| 2019 | 100                              | 92                          | 78  |
| 2018 | 100                              | 90                          | 78  |
| 2017 | 100                              | 98                          | 92  |
| 2016 | 100                              | 98                          | 91  |
| 2015 | 100                              | 98                          | 91  |
| 2014 | 93                               | 88                          | 70  |
| 2013 | 96                               | 92                          | 75  |
| 2012 | 96                               | 92                          | 80  |
| 2011 | 94                               | 91                          | 73  |

Employee Training Performance from 2011 to 2021

| Year | Training programs organized and participated (session) | Employees' training participation (10,000 hours) | Employees' on-the-job academic degrees obtained (case) |
|------|--|--|--|
| 2021 | 77120  | 250  | 2431   |
| 2020 | 84771  | 215  | 2628   |
| 2019 | 107787   | 137  | 1679   |
| 2018 | 75187  | 485  | 1424   |
| 2017 | 52676  | 112  | 2251   |
| 2016 | 47554  | 331  | 3028   |
| 2015 | 32672  | 133  | 2882   |
| 2014 | 43352  | 91   | 3520   |
| 2013 | 37491  | 164  | 2387   |
| 2012 | 21028  | 126  | 1138   |
| 2011 | 11975  | 108  | 1580   |

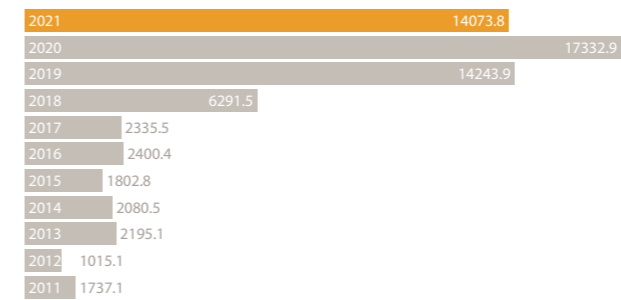
Workplace Safety Performance from 2011 to 2021

| Year | DIFR recorded per 1,000 employees (%) | New case of occupational diseases (case) |
|------|---------------------------------------|--|
| 2021 | 0.2                                   | 0  |
| 2020 | 0.2                                   | 0  |
| 2019 | 0.4                                   | 1  |
| 2018 | 0.5                                   | 1  |
| 2017 | 0.5                                   | 2  |
| 2016 | 0.5                                   | 0  |
| 2015 | 0.9                                   | 3  |
| 2014 | 1.3                                   | 2  |
| 2013 | 1.6                                   | 1  |
| 2012 | 2.3                                   | 3  |
| 2011 | 1.4                                   | 19                                       |

## Corporate Citizenship

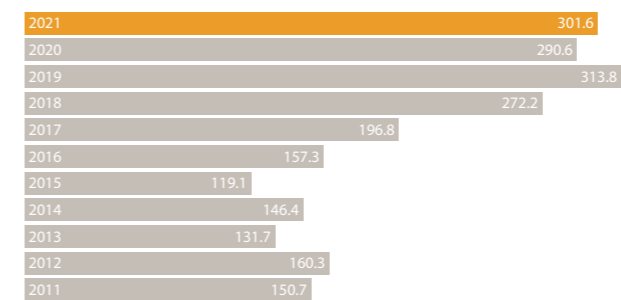
Social Public Welfare Expenditure from 2011 to 2021

Unit: RMB 10,000



Payment of Taxes from 2011 to 2021

Unit: RMB 100 million

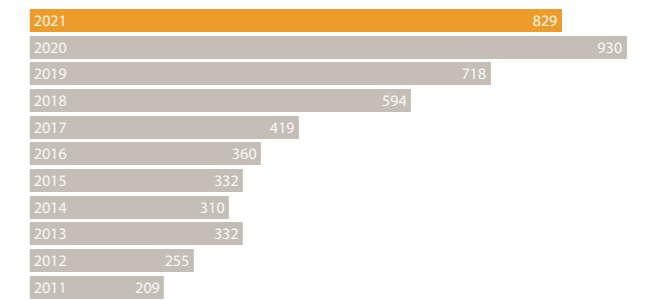


Assistance of Students from 2011 to 2021

| Year | Special scholarships established (item) | Total scholarship provided (RMB 10,000) | Number of students awarded or subsidized (person) | Internship bases established (base) | Undergraduate posts provided (person day) |
|------|---|---|---|-------------------------------------|---|
| 2021 | 16                                      | 109                                     | 200   | 85                                  | 37005                                     |
| 2020 | 20                                      | 99                                      | 298   | 128                                 | 53145                                     |
| 2019 | 22                                      | 113                                     | 284   | 132                                 | 52689                                     |
| 2018 | 18                                      | 73                                      | 188   | 118                                 | 45464                                     |
| 2017 | 14                                      | 72                                      | 155   | 163                                 | 31519                                     |
| 2016 | 8                                       | 37                                      | 266   | 134                                 | 34030                                     |
| 2015 | 8                                       | 36                                      | 159   | 47                                  | 26586                                     |
| 2014 | 31                                      | 53                                      | 227   | 97                                  | 28619                                     |
| 2013 | 18                                      | 112                                     | 506   | 119                                 | 36530                                     |
| 2012 | 20                                      | 136                                     | 466   | 98                                  | 17815                                     |
| 2011 | 27                                      | —                                       | 727   | —                                   | —   |

Number of Supported Social Welfare Projects from 2011 to 2021

Unit: Item



Performance in Employment Assurance from 2011 to 2021

Unit: Person

| Year | Number of new employees | Current year's graduates | Military personnel transferred to civil work |
|------|-------------------------|--------------------------|--|
| 2021 | 35170                   | 3375                     | 2  |
| 2020 | 22032                   | 3667                     | 24   |
| 2019 | 27763                   | 3890                     | 22   |
| 2018 | 26553                   | 3626                     | 141  |
| 2017 | 29612                   | 4727                     | 139  |
| 2016 | 22342                   | 3129                     | 23   |
| 2015 | 16929                   | 2473                     | 10   |
| 2014 | 23617                   | 3848                     | 46   |
| 2013 | 16081                   | 4383                     | 158  |
| 2012 | 15901                   | 3743                     | 521  |
| 2011 | 21182                   | 4276                     | 241  |

Volunteer Activity Organization from 2011 to 2021

| Year | Volunteer groups established (group) | Input in volunteer support (RMB 10,000) | Number of staff volunteers (person) | Volunteer service provided (hour) |
|------|--------------------------------------|---|-------------------------------------|-----------------------------------|
| 2021 | 221                                  | 180                                     | 11517                               | 74568                             |
| 2020 | 192                                  | 190                                     | 10121                               | 49220                             |
| 2019 | 213                                  | 2219                                    | 10343                               | 40192                             |
| 2018 | 189                                  | 126                                     | 6853                                | 44445                             |
| 2017 | 335                                  | 363                                     | 5334                                | 25164                             |
| 2016 | 112                                  | 344                                     | 5646                                | 28157                             |
| 2015 | 56                                   | 191                                     | 2187                                | 14840                             |
| 2014 | 65                                   | 145                                     | 3400                                | 9418                              |
| 2013 | 109                                  | 145                                     | 4864                                | 10681                             |
| 2012 | 67                                   | 91                                      | 3337                                | 39778                             |
| 2011 | —                                    | —                                       | —                                   | 10618                             |



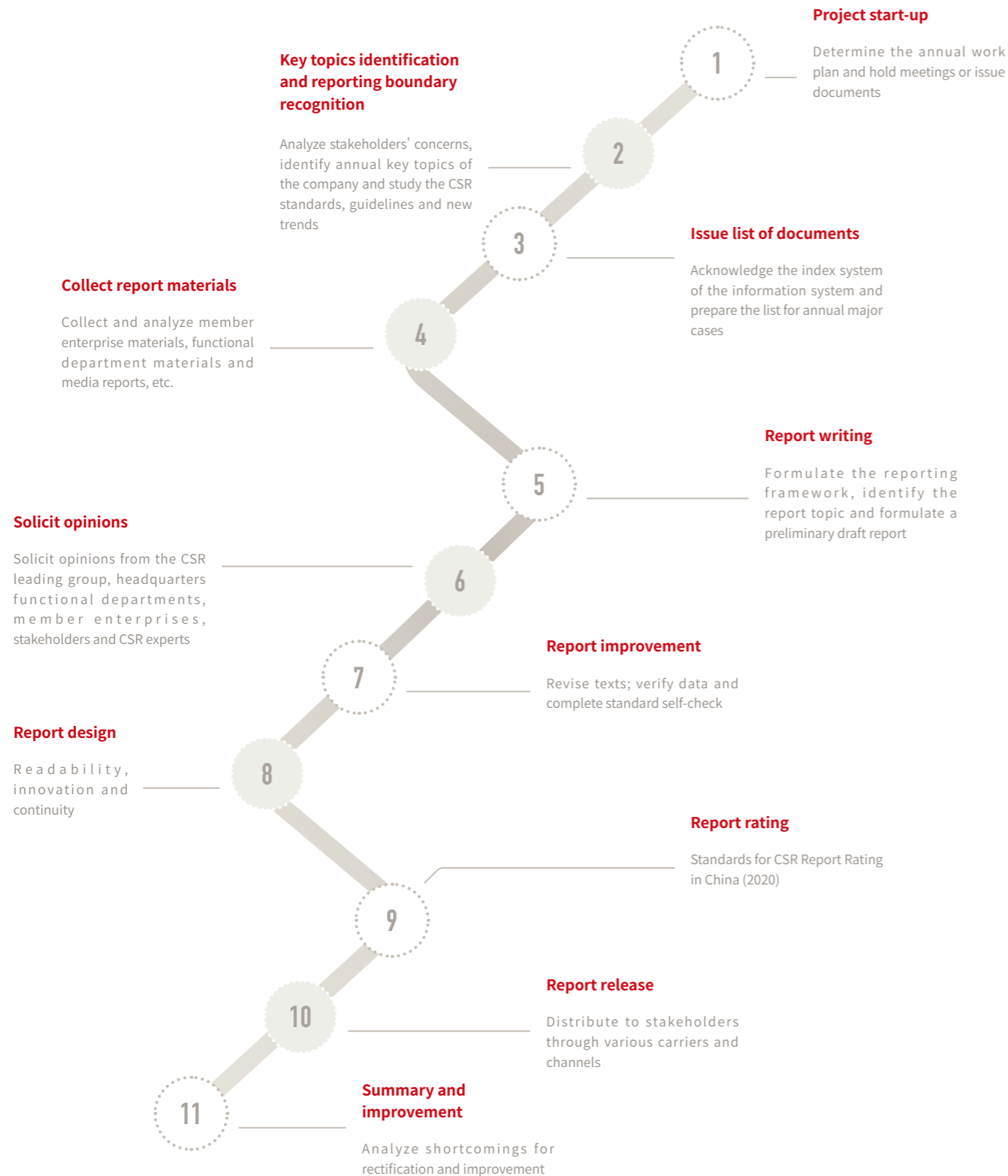
## Index of Indicators

| Contents  | United Nations Sustainable Development Goals (SDGs) | GRI Sustainability Report Standards (GRI Standards)               | Corporate Social Responsibility Reports in China for Nonmetal Mineral Products (CASS-CSR 4.0) |
|---|---|---|---|
| Report Norms  | -   | 102-46, 102-50-102-53   | P1.1-1.3  |
| Chairman's Address  | -   | 102-14, 102-15  | P2.1-2.2, P3.1-3.2, M1.6-1.7, M2.4, S1.4, S4.12   |
| About Us  |   | 102-1, 102-2, 102-4-102-8, 102-10, 102-16, 102-18, 102-22, 102-24 | P4.1-4.4, G1.1-1.2  |
| Responsibility Featured Story: Building Materials to Facilitate the Dual Carbon Goals | <br><br><br><br>                                    | 302-1, 302-3-302-5, 305-1, 305-5, 305-7                           | E2.1-2.5  |
| <b>Part I: Smart Use of Resources to Create Sustainable Value</b>                     |   |   |   |
| Promoting Prosperity with Development   | <br><br><br>  | 102-2, 102-26, 102-30, 203-1-203-2, 205-2                         | M1.1-1.3, M1.6-1.8, M2.2, S1.1-1.2, S1.4  |
| Creating A Better Future with Science and Technology                                  | <br><br><br>  | 201-1, 203-1-203-2  | M2.4-2.5  |
| Living in Harmony with Nature   | <br><br><br><br><br>                                | 304-1-304-3302-1, 302-3, 302-5, 305-1, 305-5, 305-7, 307-1        | E1.1, E1.3, E1.8, E1.9, E2.1-2.5  |

| Contents  | United Nations Sustainable Development Goals (SDGs) | GRI Sustainability Report Standards (GRI Standards) | Corporate Social Responsibility Reports in China for Nonmetal Mineral Products (CASS-CSR 4.0) |
|---|---|---|---|
| <b>Part II: Services for Construction to Enable a Better Life</b> |   |   |   |
| Growing Together with Employees                                   | <br><br><br><br>                                    | 403, 404-410  | S2.11-2.15, S2.2-2.4, S2.7-2.8, S2.10, S2.17-2.18, S3.1-3.7                                   |
| Marching Towards A Better Society                                 | <br><br><br><br><br><br>                            | 201-1, 203, 204, 413, 415                           | S4.1, S4.5-4.11   |
| Assuming the Long-term Responsibility                             | <br>  | 102-12-102-13, 102-40-102-44, 102-9, 418            | G6.1-G6.3, M2.9-2.15, M2.17-2.18, E2.24   |
| Future Prospects  | -   | -   | A1  |
| <b>Appendix</b>   |   |   |   |
| Responsibility Performance  | -   | -   | A2  |
| Index of Indicators   | -   | 102-55  | A5  |
| Reporting Process   | -   | -   | P1.1  |
| Rating Report   | -   | -   | A4  |
| Feedback  | -   | 102-53  | A6  |



## Reporting Process



## Rating Report

### Rating Report of Sustainability Report 2021 of China National Building Material Group Co., Ltd.

Commissioned by CNBM, a rating panel is set up consisting of experts selected and assigned by the "Chinese Expert Committee on CSR Report Rating" to rate the Sustainability Report 2021 of China National Building Material Group Co., Ltd. (hereinafter referred to as the "Report").

#### I. Basis

Corporate Social Responsibility Reports in China for Nonmetal Mineral Products (CASS-CSR 4.0) by Chinese Academy of Social Sciences and Standards for CSR Report Rating in China (2020) by Chinese Expert Committee on CSR Report Rating.

#### II. Process

1. The Rating Panel reviews and confirms the Letter of Confirmation about CSR Report Process Data and relevant supporting materials submitted by the preparation team of the Report;
2. The Rating Panel evaluates the preparation process and contents of the Report and produces a rating report;
3. Deputy Chairman of the Chinese Expert Committee on CSR Report Rating, Chief of the Rating Panel and experts in the Rating Panel jointly review and sign the rating report.

#### III. Conclusions

##### Process (★★★★★)

The Administration Department of the Group led in setting up the report preparation team, coordinated the detailed preparation; key departments proposed and reported basic data and reviewed related contents; the Chairman and the General Manager were responsible for final review and sign-off of the Report. The Report was defined as a vital tool to disclose responsibility performance with compliance, improve social responsibility management and intensify communication with stakeholders and thus it had a clear functional and value positioning; material issues were identified according to national macro policies, international & domestic social responsibility standards, industrial benchmarking, company development strategy and survey of stakeholders; the Group planned to release the Report on its official website and embed the "central enterprises social responsibility report centralized release" activity for the secondary release, and presented the Report in electronic, hardcopy, Chinese-English bilingual and long-picture versions. In short, the Report had excellent process performance.

##### Substantiality (★★★★★)

The Report disclosed such key issues in the industry of nonmetal mineral products as product quality management, sci-tech innovation, occupational health management, safe production, R&D and application of environmental protection technology & equipment, energy & resources saving, management of hazardous chemicals, reduction in emission of "three types of wastes", construction of "green mine" and supply chain responsibility in a systematic manner and with detailed and adequate description. Thus, its performance in terms of substantiality was superb.

##### Integrity (★★★★★)

The main body of the Report disclosed 93.59% of core indicators in the industry of nonmetal mineral products, including Promoting Prosperity with Development, Creating A Better Future with Science and Technology, Living in Harmony with Nature, Growing Together with Employees, Marching Towards A Better Society and Assuming the Long-Term Responsibility. Therefore, it had an outstanding performance in terms of integrity.

##### Balance (★★★★★)

The Report disclosed such negative data as DIFR recorded per 1,000 employees, yearly substantive complaints received due to betrayal of customer information, new occupational-disease employees, death liability accident, number of minor injuries and death toll and gave a brief introduction of the inspection and feedbacks and the rectification measures for the environmental violations of the enterprises. Its balance performance was excellent.

##### Comparability (★★★★★)

The Report offered the comparison data for three consecutive years of 62 key indicators such as revenues, production of cement, revenues from sci-

tech innovation, the number of newly-created jobs, comprehensive energy consumption per ton of cement and utilization rate of circulating water and performed horizontal comparison in terms of the 4<sup>th</sup> among World's Top 50 Most Valuable Engineering and Construction Brands in 2021. Its performance in comparability was outstanding.

##### Readability (★★★★★)

In the Report (Part I and Part II), an issue-based framework was adopted to fully demonstrate the concept, action and effectiveness of the enterprise's annual responsibility performance from six dimensions, with clear structure and prominent key issues; the cover design and transition pages between the chapters adopted the big real pictures of specific scenes of responsibility performance to highlight the industry features and enhance the distinctiveness and impressiveness of the Report; the QR code was embedded in many places to extend the content interpretation, and comments from stakeholders were added to prove responsibility performance effects, which strengthened the communication of the Report; the column "Data Review 2021" was set up to feature the annual key performance. In a word, the Report had great performance in readability.

##### Innovativeness (★★★★★)

The Report set up the responsibility featured story called "Building Materials to Facilitate the Dual Carbon Goals" to systematically demonstrate the initiative and value contribution of the enterprise in implementing the "dual carbon targets" strategy from innovation-driven, energy substitution, carbon sequestration and energy storage, collaboration and linkage, market participation, etc., and highlight the responsibility of central enterprises; organize training, assessment and evaluation on social responsibility and ESG management of all-level enterprise members to improve their ability of responsibility performance; actively encourage subsidiaries such as China National Building Material Co., Ltd., China Jushi, Sinoma International, Zhongfu Shenying to compile and issue social responsibility/ESG reports independently, promote the full coverage of information disclosure of listed enterprises, and deepen the vertical integration of social responsibility performance. Hence, its performance in innovativeness was excellent.

##### Comprehensive rating (★★★★★+)


The evaluation by the rating panel showed that the Sustainability Report 2021 of China National Building Material Group Co., Ltd. reached five-star level in terms of process, substantiality, integrity, balance, comparability, readability and innovativeness. Therefore, its comprehensive rating was "Five Star+" and the Report itself was a paradigm of CSR report.



CNBM's sustainability reports have obtained Five-Star rating for seven consecutive years and Five-Star+ rating for three consecutive years.

#### IV. Improvement Suggestions

It was suggested to disclose more core industrial indicators and improved the integrity of the Report.

 Deputy Chairman of Chinese Expert Committee on CSR Report Rating

 Chief of Rating Panel

 Expert from Rating Panel



Scan the above QR code to view company rating files

Produced on: October 25<sup>th</sup>, 2022



## Feedback

Dear Readers,

Thank you very much for your attention and support to the social responsibility work of China National Building Material Group Co., Ltd. Please kindly fill in the following questionnaire. We will continue to improve in the future according to your comments and suggestions.

**Your comments on China National Building Material Group Co., Ltd. Sustainability Report as follows:**

Overall evaluation:  Very good  Good  General  Not good  Rather poor

Richness in contents:  Very good  Good  General  Poor  Rather poor

Page suitability:  Very good  Good  General  Poor  Rather poor

Design:  Very good  Good  General  Poor  Rather poor

Language friendliness:  Very good  Good  General  Poor  Rather poor

**In your opinion, what are the most essential elements for China National Building Material Group Co., Ltd. to perform its social responsibility:**

Market Performance  Sci-tech Innovation  Energy Conservation and Environmental Protection  Employee Care  Corporate Citizenship

Responsibility Management

**What do you think we should do to further strengthen our social responsibility management:**

Information collection  Organizational structure construction  Talent training  Performance evaluation  External publicity

Stakeholder management  Public welfare planning  Level of annual report preparation  Research on social responsibility  Others

**How would you like to know about our responsibility performance:**

Printing report  Social Responsibility Column on Official Website  WeChat Public Account  Professional media on social responsibility  Others

**What would you like to see in China National Building Material Group Co., Ltd. Sustainability Report?**

---

**Which performance of China National Building Material Group Co., Ltd. do you pay more attention to in the future?**

---

**Other comments and suggestions?**

---

**In what position did you participate in our activities for collecting opinions?**

Government department  Institutional investors  Small and medium shareholders  Financial institution  Industry association  Supplier

Customer  Competitive enterprise  Partner  CSR professional institution  Public welfare organization  News media

Group middle and senior managers  Group staff  Others

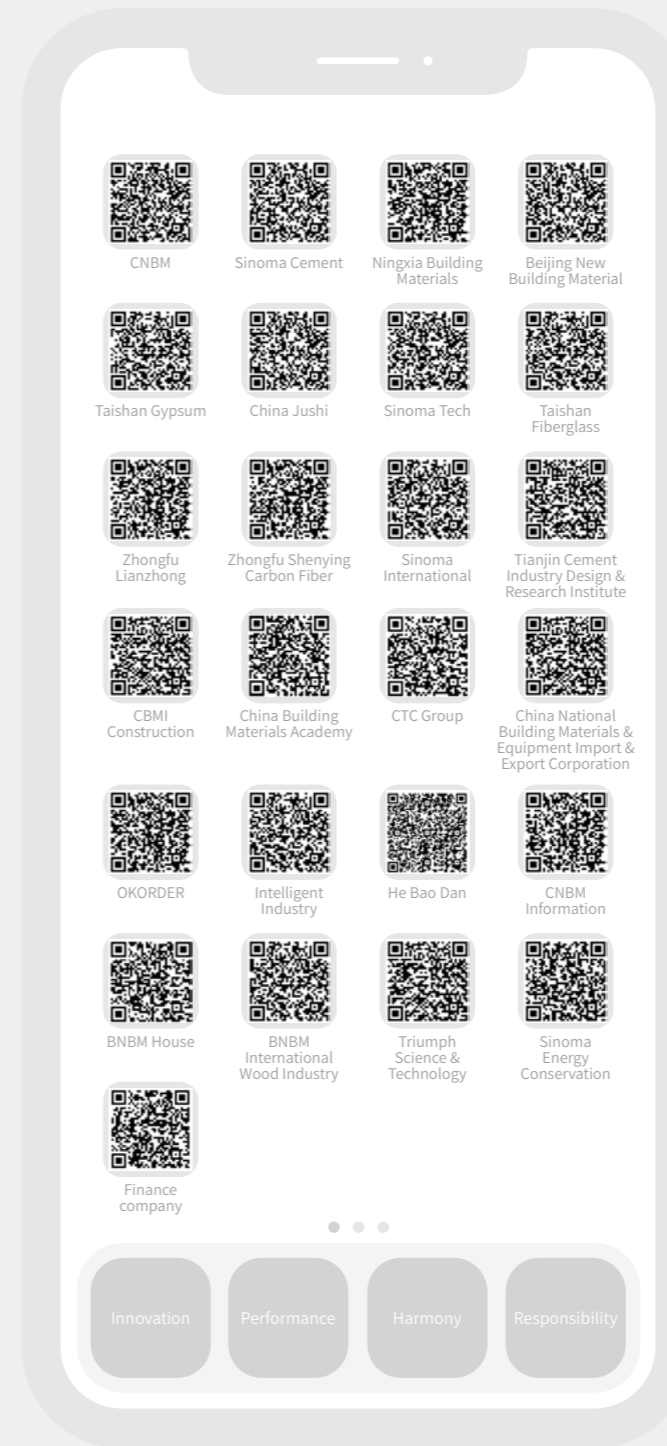
**In order to contact you conveniently and respond to your comments and suggestions in time, please offer your contact and related information.**

**We will keep it reliably confidential.**

Name: \_\_\_\_\_ Occupation: \_\_\_\_\_ Institution: \_\_\_\_\_

Contact Address: \_\_\_\_\_ e-mail: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_



Scan with your WeChat to follow our official account





China National Building Material Group Co., Ltd.  
Address: Building 2, Guohai Plaza, No. 17, Fuxing Road, Haidian District, 100036 Beijing  
Contact: Wang Qun  
E-mail: [csr@cnbm.com.cn](mailto:csr@cnbm.com.cn)  
Tel.: 010-68138129  
Fax: 010-68138088  
Website: [www.cnbm.com.cn](http://www.cnbm.com.cn)

Environmental considerations for report release  
Paper: environmental-friendly papers are used for printing  
Ink: environmental-friendly ink is used to reduce air pollution  
Designed and produced by: 



中国企业社会责任报告  
评级专家委员会  
Chinese Expert Committee on CSR Report Rating